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REMOTE STORAGE

CLAY RECORD

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THE LAMINATION OF CLAYS AND SOME REMEDIES.

By John A. Turner, A. M. I. M. E.

It may safely be stated that the introduction of machinery for brickmaking also brought with it the troubles of lamination, or, to use a more common term, the "coring" of the bricks, for it is well known that coring is absent in all hand-made bricks, and were it possible to revert to the days of the spade and ring pit, when only the barrow and stool were used, we should at once remove the trouble.

The demands of to-day, however, totally prevent a return to old hand methods, and besides, in doing so, we should bring up other difficulties which would, to say the least, act as a deterrent to progress generally.

Machinery is undoubtedly most essential. Without it we could not treat the shales of the country such as Accrington, Peterborough, and the vast heaps of "blaise" won from the carboniferous strata. These materials are very unlike the plastic clays. They cannot be dug and tempered by the spade, but must be subjected to powerful crushing machinery. Again, we have plenty of plastic clays which will work in almost any machine, and under conditions quite primitive in character. Yet on the other hand we find some varieties, no matter how well the machine appears to be equipped, that absolutely refuse to leave the die with the slightest sign of uniformity owing to being cored or fish-backed in the corners, etc. Therefore the first consideration towards the prevention of lamination is the study of the material intended to be shaped into bricks. This is a matter requiring skill, and it necessitates a very careful examination of the clay, and the natural laws or principles governing the manipulation must also be considered before a definite conclusion can be arrived at which will ultimately prove successful.

Were this more faithfully carried out we should hear less of the troubles of coring, but it only too often happens that a plant is fixed without any expert advice whatever beyond the opinions of a talkative foreman, only to find that the machinery installed is unsuitable.

Instances of this kind are not far to seek, and it is usual to hear that after much experimental work the naked truth is forced upon them.

The systems of brickmaking may be classed under five heads, as follows:

1. Hand-making.
2. Soft Mud. A term often used for which we are indebted to America. The machines in this country making soft mud are the "Norris" and "Monarch."
3. Plastic. In one, two or three process upon both horizontal and vertical machines, and both types employ a wire-cutting table.
4. The Stiff Plastic. In this machine the bricks are forced into movable moulds from a pugging barrel by blades set in the form of a screw, and the mould is afterwards rotated and the brick subjected to a repress.
5. The Semi-Plastic, or, as it is misnamed, the Semi-Dry. This method necessitates the pulverising of the materials, consequently the laminations of formation are completely destroyed, and as the ground dust is fed into moulds and pressure brought to bear in a direct way, no lamination or core-cracking can arise from the machine.

As hand-made bricks are also free from these failings, we are left with only three methods where there exists a liability of core-cracking.

The soft mud process is not in general use, and it is probably on this account we do not get complaints of inferior bricks produced by this method, so for the purpose of this article we may dismiss the third of the five methods, and confine ourselves to the others, where there is only too often serious cause for complaint.

In the plastic and stiff plastic machines the material is extruded through shaped dies by a worm or screw formed by blades set semi-continuous for some distance, and ending finally in a continuous thread somewhat auger-shaped. The action of the clay is like that of a nut upon a bolt, and the revolving of the shaft in a certain direction forces the clay

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forward and out at the mouthpiece or die. In the vertical plastic mills the dies are fixed at right angles to the forcing blades, but in the horizontal the movement of the clay is in a continuous direction. The stiff plastic machines are also built with horizontal and vertical barrels, but the progress of the material is of an intermittent character, and the "churning" which develops causes excessive friction. This "churning" takes place during the rotation of the moulds, and here rises the belief that in doing so it breaks up the coring tendency, and it is also thought that should there be any leaning at all to coring, the repressing will entirely eradicate it. This is quite an erroneous impression, for there are many clays when once laminated which refuse to rid themselves of its traces unless completely broken up and treated afresh. Examples of bricks exhibiting such faulty characteristics were not wanting at the recent Building Trades Exhibition.

The writer has dealt with clays upon plastic machinery where not the least semblance of coring was ever shown, and, what may seem peculiar, the clay was dug, passed through one pair of rollers and into the mill without any further aim at preparation, and the maximum output of 20,000 was the usual day's run, and yet the same type machine dealing with neighboring clays has proved a most abject failure.

Recently the writer's attention was drawn to a "Little Wonder" type of mill built in Peterborough, dealing or attempting to deal with the clays of Cambridgeshire. Here the bricks were cored, and it was an exception to find a brick that did not clearly show the cracks.

Judging from the castings lying about, many attempts had been made to overcome the trouble. Extended mouthpieces had been attached, new shaped dies procured, but so far as could be seen all the newer portions were built on the lines of the old and no thought given to the clay and its movement in the barrel. One can quite understand the proprietor tiring and adopting the semi-plastic system to rid the coring.

Here was a clay very readily given to lamination, and yet one which could be successfully worked in a plastic machine. Clays of this variety require a most thorough preparation *outside* the brick machine, and instead of lengthening the barrel and mouthpieces must be designed to ease the movement of the clay from the cylindrical to the rectangular form. The dies also must be well shaped and not too long, and permit of easy lubrication by either forced means or gravity alone.

Most failures occur because of insufficient preparation before passing into the machine, and too much stress cannot be laid upon this point. Many people buy a machine expecting it to do everything most correctly without assistance. It very often does go a long way to carry out these demands, but, to say the least, brains alongside it prove of great assistance in the little troubles.

Few recognize that the flow of the clay must be equalized in the mouthpiece and die to get the best results. Plastic materials under pressure follow the laws of fluids, and frictional resistance occurs in like manner. The portion of the clay in contact with the barrel is held back slightly, and the center of the column moving faster causes a constant disruption. This results in the brick being "grained" or cored, and the passing through the die fails to cause the slightest unison again, and the burned brick is therefore of little commercial value owing to the circular cracks. Clays not flowing smoothly also dry very irregular and are apt to produce a hollow side. A more thorough preparation and a well-shaped mouthpiece will remedy this.

A good designed mouthpiece gradually alters from the circular to a more oval form, so that the shape approaches that of the entrance to the die, consequently the work of the die is less severe and every chance given to correctly shape the column and leave it free from faults. There are several good designs of mouthpieces in use, and one with steel linings inserted in like manner to the metal-lined dies affords a means of lubricating the flowing column at a point in its progress where most needed.

The writer some few years ago carried out successful experiments in this direction, and also found that clays which laminated in the screw machine passed through the "steam stupid" absolutely free from coring defects.

Brick dies are also a very important item in easing the passage of the clay, and although metal dies have proved to be the most durable, we find isolated instances where the use of fustian is an advantage.

Many clays work better in the vertical type of machine, and those of South Lincolnshire may be instanced. These clays laminate most markedly. This can readily be seen at the delivery mouth, but the shaping of the brick is not carried out here. It is taken forward and delivered into expression rollers, which treat it and force it under entirely different conditions to screw propulsion. Lamination is completely destroyed and the product is a good saleable brick. Expression rollers are very advantageous in that they thoroughly do their work, and the only disadvantage to the maker is that the clay is worked a little softer.

The knowledge that the rollers cure lamination by completely breaking up the clay has led to experiments in the horizontal machines in placing across the mouthpiece inside the barrel a series of knives or steel bars to cut up the clay and also to prevent the center flowing too fast. Some degree of success has attended these arrangements, but the writer has not sufficient experience of them to do more than mention them. In the United States a few troublesome clays have been "cured" by making the bricks end-way from two columns formed in one die. When the clays laminate with the stiff plastic machines it becomes very difficult to overcome it. More complete preparation of the clay will do much towards this. Fortunately the friction of the mouthpiece and mould is not as great as the horizontal plastic machines, and this largely prevents the faults being over-serious. A well-known brick machine maker in discussing this point with the writer stated when he tested clays which appeared suitable to work stiff plastic and found them liable to lamination he advised semi-plastic as the safest remedy for the evil. Though there is much in favor of such a decision, the conditions must be considered first, and very closely too.

It is true there are many clays now being worked plastic which would work under more successful conditions were the semi-plastic system used. This is especially so upon clays of big contraction, for when the water is not used no expansion takes place and the contraction is thereby decreased.

Therefore the remedies for the prevention of lamination may be summed up concisely as follows:

1. By resorting to hand-making.
2. The use of the semi-plastic system.
3. By very careful preparation of the clay outside the finishing pugging barrel, a short barrel, well designed mouthpiece lubricated, and a die with good linings and lubrication ways.
4. By the use of expression rollers to form the bricks after the clays have passed the pugging barrel.
5. By using in horizontal machines means to break up the column and cause a more equalized flow through the mouthpiece and die.—Brick and Pottery Trade Journal.

GASOLINE ENGINES FOR BRICK AND TILE MAKING.

The practical adaptability of the gasoline engine for the operation of clay working machinery has proven it to be in every way the ideal power for this class of work, and its general adoption is rapidly increasing.

To the uninitiated the difference in styles of construction employed in gas and gasoline engines may appear very insignificant, but to the experienced user they are full of suggestions as to the machine's utility, durability, etc. In this class of machines, simplicity includes as many desirable points, perhaps, as in any line that can be mentioned.

The demand everywhere is becoming more urgent for a power that is at once simple, safe, reliable and cheap, yet always ready at a moment's notice. In these points steam, electricity, water and wind motors have fallen short of success. But it would seem, from the many testimonials of those who are using it, that the demand of the hour is fully met by gasoline engines.

For many purposes, and for many reasons, gas and gasoline engines make an efficient power. They are now coming to be used extensively in brick and tile plants, and if the selection is wisely made the engine can be operated economically and safely, there being no danger from explosion or fire, no time wasted in waiting for the start-up, and a great saving in labor, space and many incidental expenses. A gas engine once started runs itself.

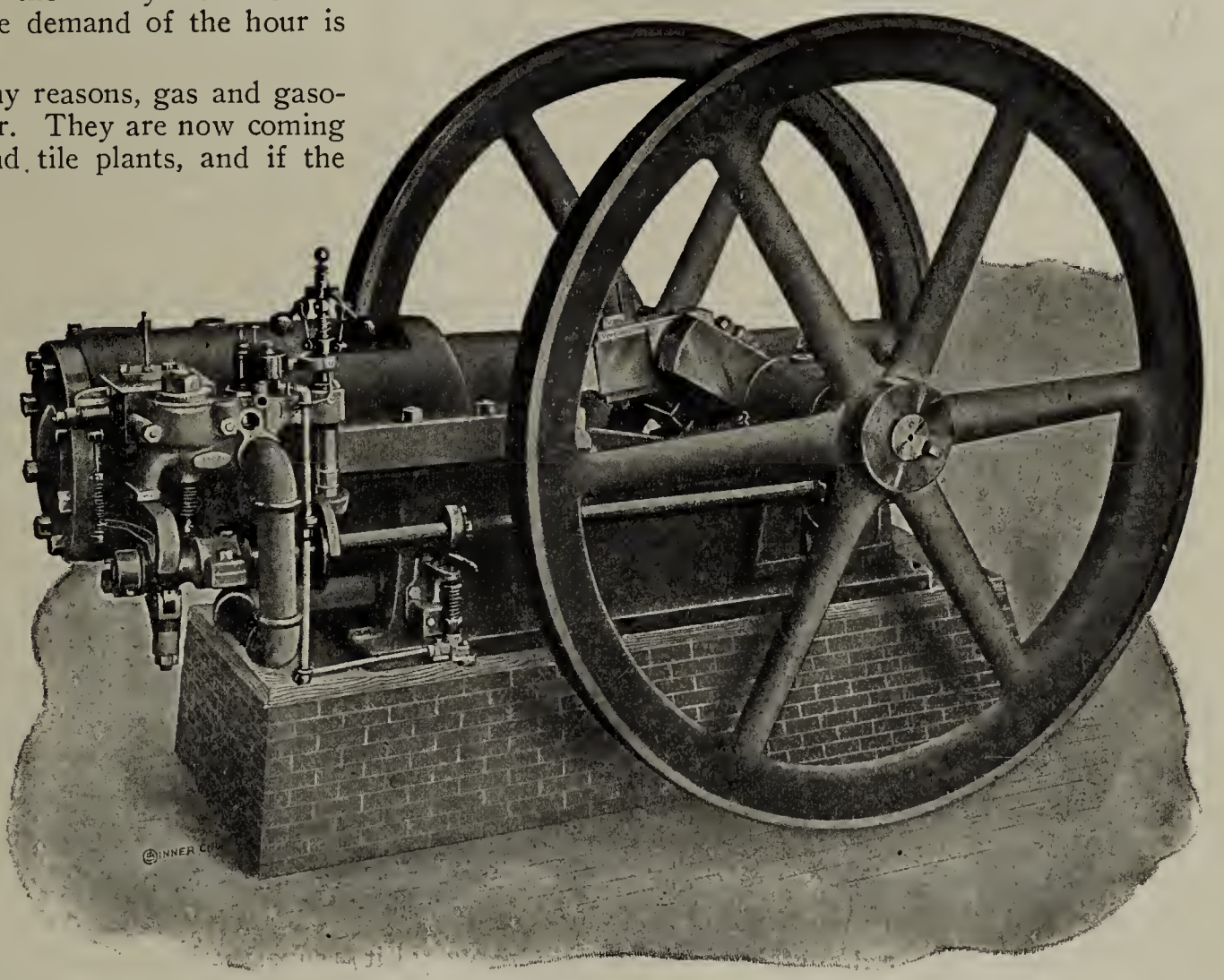
The New Era Gas and Gasoline Engines are claimed to possess all the advantages that a model motive power should have. Certainly the neatness and simplicity of this engine and its working parts will please the eye of every clayworker. This engine can be run with manufactured or natural gas or gasoline, and can be changed to either at will.

These engines were introduced over twelve years ago, and are now in use and giving uniform satisfactioh all over the United States. It is of pleasing design, is heavy, strong and simple, and is run at a comparatively slow speed. The cylinder is horizontal and does not overhang the bedplate. It is built on the plan of a lateral shaft rotated by spiral gears on the crankshaft, which in turn drives the governor by bevel gears, and operates directly on the valve stems by means of cams. The valves are so set that they can be taken out, or ground in by merely removing the screw cap over them, without disturbing any other part. These features, and the absence of rods, elbows, arms, eccentrics, cranks, etc., render adjustment an easy matter.

The governor is of the ball type, extremely sensitive, and governs the engine by cutting out the fuel entirely when the speed gets above that at which the governor is set. Under less than full load, when the speed is too high, the fuel valve remains closed, and only pure air is emitted through the exhaust valve. This serves not only to clean the cylinder of burnt gas left from the previous explosion, but tends to cool the cylinder and valves. This is called the self-scavenging method. By an arrangement peculiar to the "New Era" the gas valve can not remain open when the engine is at rest, and consequently there is no danger of flooding the engine room with gas.

All the working parts are so arranged as to be free and independent of each other, so that one part can be taken out without disturbing any other part. As this must be done occasionally, this construction is appreciated by the engineer. The valves, igniter and governor, all being on one side of the engine, and operated by cams or gears on the lay shaft, the objectionable long rods that appear on many other engines are here unnecessary. The angle pillow blocks and spiral gears command special attention, as the angle pillow blocks receive the first shock of the explosion at the bottom of the box, and the wear is, therefore, easily taken up.

Another feature peculiar to the "New Era" is an auxiliary exhaust. This is a valveless port in the side of the cylinder, so placed that it is automatically uncovered by the piston at the end of its upward stroke, allowing the burnt gas to escape to the exhaust vessel or pipe. The only duty left for the regular exhaust valve to perform is to allow the escape of what is left in the cylinder. The effect of this improvement upon the life of the exhaust valve as well as the efficiency of the engine, is obvious.



The connecting rod is a regular strap rod, such as meets the commendation of all engineers; is made of forged iron, with hard brass boxes, held in place by gib and key.

The manufacturers of the New Era gas and gasoline engines have well equipped works at Dayton, O., where they are constantly adding still greater improvements to their specialties and constructing new patterns.

The New Era stationary engine is made in a number of sizes, the largest developing 125 horse power.

Those who are interested and desire a catalogue or further information are requested to drop a line to The New Era Gas Engine Co., 95 Dale avenue, Dayton, Ohio, mentioning this article in the Clay Record.

THE ELIMINATION OF HAND LABOR IN BRICKMAKING.

The above title is that of a paper by Mr. J. Parker B. Fiske, presented to the American Ceramic Society in 1903, but the subject is one that progressive men have considered for many years. It has recently been brought to our attention in our clay journals by communications from H. Haigh upon the process employed by Alfred A. Gery at the plants of the United States Brick Co. The information given by Mr. Haigh is no more than has come to me and to many others, from various sources, except that his is the first published statement from a man of experience in brick manufacture who has had the privilege of inspecting the plants, as to the practicability and profitability of the Gery process. Not that I have had any doubts about the practicability of burning brick on cars under certain conditions, nor could I doubt that the business established by Mr. Gery must be profitable to somebody, otherwise so much capital for its development and expansion could not be secured. Mr. Haigh estimates that the saving in manufacture, presumably over the most economical methods in general use, is 30 per cent. If this is a fact, and that in calculating this saving there is included interest on the increased investment and the necessarily increased charges of repairs and depreciation, then it is a matter of deep concern to all who are manufacturing brick, common building brick, in or near our large cities. Especially must this be true since it is the avowed policy of the United States Brick Co. to establish plants to supply all of the largest markets. Several months ago word came to me that the brickmakers of the largest city of Ohio were in a flutter because of the rumor that the United States Brick Co. were going to locate in their midst. What is to prevent this? Surely if it can be proven that the Gery process enables brick to be produced 30 per cent cheaper than by any other process, capital for its extension into all of our large markets can be secured. No anti-trust law could reach such a perfectly legitimate investment of money, even if it should give this company a monopoly of the brick business. In fact, if the price of brick to the consumer should be lowered anything like 30 per cent, would it not be better for the people at large that the United States Brick Co. should make all the brick, even though it might mean disaster to those now making by other processes?

Evidently this is a subject that should be freely discussed in the trade journals of the brick industry since it may later become a question of life or death to many of our largest manufacturers. Even if other methods of eliminating hand labor in brickmaking should soon be developed, that would compete successfully with Mr. Gery's, without infringing upon his patents, yet there must be such a loss from obsolete equipment as to make investments in the brick business now extremely hazardous, provided, of course, that this large saving can be practically accomplished.

My purpose in writing of this in the Clay-Record is to start a discussion that may lead to our receiving more light upon the subject. I haven't seen any of Mr. Gery's plants and no descriptive report has been published of his process, hence I must move somewhat in the dark. Of course, like many others who have devoted themselves to brick manufacture, I have given considerable thought and investigation to the subject of eliminating hand labor, and especially to a method of eliminating the labor involved in the setting of the brick in the kiln. There seems to be but two ways to accomplish this. The way that has been given most study is the setting of the brick from the machine directly upon the cars or movable kiln bottom upon which they are dried, burned and cooled. The other way, that, so far as I know, has only been tried by Mr. Fiske, is to set the brick from the machine upon forms so that they can be picked up in large units by an electric traveling crane and conveyed to drier and kiln and set down without disturbing their arrangement. In the latter system there is also saved the hand labor of loading the brick on cars.

Both systems specify the use of the continuous kiln for burning. In the one, the brick are moved through the heat and in the other the heat advances through the brick in the kiln. There can be a little saving in the car system in the fuel and labor of burning, but the saving in labor of loading brick on cars or boat by the Fiske system more than offsets this.

The system adopted by Mr. Gery is one that has been worked upon by many men for many years, has been the subject of a great many patents and has been put to practical test several times. German engineers have, at different times in the past, developed the tunnel kiln for burning brick on cars, and one, that of Moeller and Pfeifer, is said to be in successful use there today. In this country brick, dry-press face brick, were burned on cars in tunnel kilns several years ago by Anderson. I knew two men myself, with one of whom I was associated for several years, who worked out plans for such kilns and both secured patents upon their designs. A recent effort in this direction has been put to test and advertised, but did not have as much merit as several previous efforts by other men.

So Mr. Gery had the advantage of working along a line that had been well exploited. That he has developed a successful method, does not mean that he has exhibited such superior mechanical abilities, but rather that he has been able to secure the confidence and support of those who have had money for investment. There are probably several engineers connected with brick manufacture who could design and operate successfully a system of burning brick on cars, if they could be backed with the money that seems to have been placed at Mr. Gery's command. If there are any who still want to invest in the development of a system of burning brick on cars let them make it known and I can assure them that one engineer, at least, will agree to work out a successful system, and without infringing upon Mr. Gery's patents either.

Mr. Fiske, on the other hand, worked in an untried field and developed a system new and original that had not been tested. I do not know what is the present status of the plant he established, but it is reported that the company is in financial straits. At any rate it is evident that his system has failed to meet the expectations of the inventor as well as the investors. I believe, however, that with a suitable

clay and a kiln of somewhat different design, that the Fiske system could be operated on a large scale with very good results.

In one respect Fiske started his project in an entirely diffent manner than that adopted by Gery. He worked his plans all out, secured his patents and then not only began the promotion of a company for making brick by his system, but prepared a paper explaining and illustrating his method before it had been fairly tried. This paper was given the publicity of all our trade journals and of the American Ceramic Society, before which it was read. He even went farther and gave the N. B. M. A., then holding their convention in Boston, a free excursion to Dover Point, N. H., to inspect the newly started plant. He thus invited criticism, and perhaps some embarrassment should his scheme turn out a failure. Gery, on the other hand, has worked out his plans, not only without any noise, but seemingly by every effort to keep them secret. This has probably impressed capitalists more favorably and has resulted in giving him more power and a greater prestige, from the air of mystery, than he otherwise would have possessed. How much money has been consumed in experiments, we can only guess, and also how much of the capital stock of the U. S. Brick Co. is water. The investors are doubtless pleased with the results, but whether there are any of them who know just what has been done by others in the line of economical brick manufacture, or just what could be done by others, should the U. S. Brick Co. become a serious competitor, especially in our western markets, is not stated. We know, however, that promoters of such undertakings generally make their comparisons of cost of manufacture with some expensive methods in use in their vicinity and not with the most economical methods of progressive manufacturers in other quarters. Moreover, what could be done by others along the same line, should pressure of competition necessitate it, or a sufficient amount of capital be provided, is generally ignored. Mr. Gery's quiet manner of promoting his schemes and the secrecy with which he has surrounded his process, has undoubtedly been favorable to their capitalization.

Not knowing the amount to be charged up to interest on the extra investment required in Mr. Gery's process, nor the amount to be reckoned for repairs and depreciation, it is impossible to figure just what the saving would be. Mr. Haigh doubtless made some calculation upon this before publishing his statement and we must either accept his figure of 30 per cent, or, leaving some things out of consideration, try to estimate what the possible saving could be. Let us suppose, for instance, that the modern plant, without the Gery system, has the most economical form of continuous kiln and uses the heat radiated from kiln for drying. Over such a plant the saving in fuel of the tunnel kiln is practically nothing. The saving in labor of firing, provided automatic stokers are used on the Gery kiln, is too small an item to take into consideration. The brick must be transported or conveyed out of the kiln and piled upon the yard or loaded into cars at about the same expense as in the best of other systems. Therefore the saving effected by the Gery process is practically that of setting and closing up the chambers. Anyone who is a manufacturer of brick should know what it costs to set common brick. He should know also that this ought by no means to be 30 per cent of the cost of manufacture. Now, if we knew the extra investment required to carry out this system, the extra cost of repairs and the daily output, we could figure about what saving would be effected. To be sure, there should be less damage to the brick because of the fewer handlings, but would that cut any appreciable figure in the proceeds of the sales? To be sure, by manufacturing on a large scale with systematic business management, conditions that the U. S. Brick Co. cannot monopolize, the cost of manufacture should be lessened. But let Mr. Gery come west, say, to Chicago, and see how much he can cut down the cost of brick, over the best equipped plants there, making 400 to 500 thousand brick a day and burning them in continuous clamps, culm having been mixed with the clay, and using, as they might, the waste heat of the cooling brick for drying, then his system will have a test that would be decisive and convincing. I am willing to grant that he might reduce the daily operating expenses and could turn out a better brick, but think of the large investment and repairs, in good times and bad times! The question is, would he be able to show larger returns to his stockholders? It must be admitted that this is still to be proven and is a question open for discussion. Investment is made in the brick business not for the purpose of eliminating hand labor, but for making money.

I am willing to concede that much of the hand labor in brickmaking can and should be saved. Such saving, however, generally means a larger investment. Where the money can be secured and the conditions are favorable the most economical plant that is practical should be built. Much fuel and labor can be saved over present methods. The first essential in bringing about this saving, in my opinion, is the employment, at the installation of such enterprises, of a competent engineer. I don't say this to advertise my business, but I am devoting my time and energies, with such talents as I possess, to engineering work, because I believe that the modern business of every kind needs the engineer, not only mining and manufacturing, but even the large mercantile business. I know of no business that needs the engineer more than that of brickmaking.

We are now on the high wave of prosperity and brick are in such demand that even an uneconomical plant can be run profitably. But when the next depression comes, which I hope may not be soon, it seems to me that there must be a falling down of some establishments and the survival of the fittest. The fittest may not be the largest. In fact, some of the large establishments that have extra large investments for the purpose of eliminating hand labor may suffer the most since at such times labor is cheap, but interest and depreciation run on just the same.

There are so many ways in which the cost of manufacturing brick can be reduced, by little savings here and there, that I not only do not fear the advent of Mr. Gery's patent system, but I rather welcome it, as an engineer, since it must needs turn the attention of all to the more economical methods of manufacturing and business management.

W. D. Richardson.

A LARGE BRICK PLANT FOR KANSAS.

The unlimited quantities of the best shale, natural gas in greater amount than at any other point, available markets and unexcelled railroad facilities have placed Montgomery county, Kansas, at the head as a brick-producing county. Caney, having the best of all these requisites for the production of clay manufactures, has attracted the location here of a plant which will stand ahead of anything of the kind in the field and in one particular, that of manufacturing vitrified posts, will surpass anything in the world.

The Monarch Brick & Tile Company was organized about six months ago and has purchased 332 acres of land adjacent to the city which contains what is pronounced by experts to be the finest bed of shale to be found in the state of Kansas, and that in inexhaustible quantities. The company will within the next 30 days begin the erection of a plant which will have a capacity of 300,000 brick, 120,000 tile and 20,000 vitrified posts every 24 hours and will employ 250 men. The construction of such a plant means more for Caney than first thought would conceive, not only for the population it will add to the city, but the fame it will give it as the home of such a magnificent institution. The plant will be built strictly up to the minute in every particular. It will have 7,700 feet of railroad track connecting with both railroads; will do its own switching, for which it has an 86,000-lb. switch engine; a $10,000 steam shovel has been contracted for; full electrical equipment will be installed and an electric automatic switching device for shale and brick cars whereby they will be handled from one central point without individual attention, the second such system to be installed in the country, the first now being in successful operation in Chicago. A 250-kw. dynamo will, in addition to furnishing the electric lights and power for the plant, provide city lights and all kinds of electric service, for which a franchise has been granted by the city council.

The plant and kilns will cover five and a half acres of ground and, as before stated, be strictly modern and the best present-day methods have devised.

The National Vitrified Post Co., though a separate institution, is the owner of the Brick & Tile Co. stock, and the two companies will be operated in conjunction. The manufacture of a vitrified post is not a new idea, the post having been patented ten years ago, but the machine to manufacture it successfully was not available until Mr. R. L. Dennison devised and patented the one which will be used by this company, which now owns the patents for both post and machine.

The completed article is a beautiful, symmetrical post, 6½ feet long, 6½ inches in diameter at the base and 3 inches at the top, being hollow and burned as is the ordinary tile. In the process of making each post will be subjected to 14,000 pounds pressure, and after being burned requires a blow on an anvil of 400 pounds to the square inch to injure; when set in the earth it will break the ground before the post if sufficient power were applied to the top.

Four machines with a daily capacity of 5,000 posts will be installed in the plant, and these will be run to their full capacity from the start, for orders have been booked for the entire output for the next two years, railroad companies being the purchasers, as it is ideal for their use, being indestructible by any of the elements. Experiments have been conducted for some time at the Caney Brick Co. plant to work out all the details before the large machines were made and proven a complete success.

The gentlemen behind this enterprise are men of large experience and with ample means at their command. Dr. G. W. Fitzpatrick, of Kansas City, is president of the company; R. L. Dennison, a consulting and constructing engineer of many years' experience in the western mining field, and inventor of the post machine, will be general manager of the post company, while H. B. Wiley, a man who has spent a lifetime in the clayworking business, will superintend the brick and tile plant.

Fully realizing the superior quality of the shale here, it is the intention of the company to use it to manufacture the highest class of product, and accordingly especial attention will be given to tile and terra cotta work, in which they will make all kinds of ornaments, copings, etc.

FIRE-PROOFING CO. ISSUES $1,000,000 OF BONDS.

The entire floating debt of the National Fireproofing Company, Pittsburg, Pa., has been removed and some additional working capital provided by an issue of $1,000,000 5 per cent bonds. These bonds are issued by the Federal Clay Company, an underlying concern of the National, and are guaranteed by the National. The Federal company had an earlier issue, but it was paid off. The present issue is the only one the National has in any form.

The bonds have been underwritten by Pittsburg banks. The price realized was par, less commission, said to be 5 per cent. The company had floating indebtedness of various kinds aggregating approximately $900,000.

About a year ago the stockholders of the company voted it the right to issue more stock, but after further consideration this course was deemed not so advantageous as the bond issue. There will therefore be no additional stock issued.

The meeting of the National board takes place July 25, when the dividend will be acted upon. An officer of the company said that there was not the slightest question concerning favorable action on the dividend. He stated also that the bond issue places the company in an excellent condition financially. The company has $8,000,000 preferred stock and $4,000,000 common.

NEW ENGLAND BRICK CO. DOING BETTER.

The New England Brick Company, Boston, Mass., earned the half-year's interest due July 1 for the first time. Under the reorganization $733,000 5s took the place of $850,000 6s, on which latter there was always default as to interest. The proportion of money to retire bonds has likewise been earned the current six months. The current coupon calls for $18,000.

TAKING EXCEPTIONS TO MAGNESIA LIME FOR MAKING SAND-LIME BRICK.

Editor, Clay Record,
Chicago, Ill.

In your issue of June 15th, I have read with a great deal of interest the article describing the plant at Newburgh, N. Y. In this article you have the following paragraph to which I beg the liberty of taking exception:

"It is claimed by many that in order to make Sand-Lime Brick successfully a high calcium lime is absolutely necessary, but the success of the Newburgh Brick shows conclusively that with the proper treatment a very high grade brick can be made from a dolomite lime with practically 40 per cent of magnesia. This ought to settle the question definitely as to the absolute necessity of having what is called a high grade or fat lime for this work."

I have myself visited the plant at Newburgh and the magnesia lime being used at that plant is an unusual lime and acts differently from any magnesia lime of which I have ever heard or seen, and consequently cannot be classed with the ordinary magnesia limes, which, as I understand it, contain certain hydraulic properties which has not been found in any other magnesia lime excepting that coming from the same section. In addition to this I would state that although magnesia lime may be used in making Sand-Lime Brick, when it is hydrated under steam pressure, magnesia lime is not as good for Sand-Lime Brick as high calcium lime for the reason that the magnesia in the lime is inert and of no consequence in the chemical combination with the silica; that being the case it requires as much more lime as the loss due to the percentage of the magnesia; in other words, if you have lime containing 60 per cent calcium oxide and 40 per cent magnesia oxide, you would require two-thirds mors lime to give equal strength—that is if you were using 6 per cent lime containing 100 per cent calcium oxide, you would have to use 10 per cent lime which contained 40 per cent magnesia oxide. In purchasing a lime containing a high percentage of magnesia, you would be paying for a large percentage of material at a high price that would be of little or no consequence in the brick.

If my statement is incorrect, I would be very glad to hear any criticism on this point.

Yours very truly,
H. O. Duerr.

AMERICAN FIREPROOFING WINS.

Americans are sharing in the London building boom. No less than four large modern hotels are under construction and contemplated, in addition to a great number of office and warehouse buildings. In connection with this boom, British architects and builders are adopting to a considerable extent our methods of steel frame and fireproof construction.

The manufacturers of hollow tile here have been successful in securing a number of contracts for fireproof work in these new buildings, and have recently made a test in London of their patent reinforced terra cotta floor arch construction. This test was made under the direction of the British fireproof committee.

ILLINOIS BRICK COMPANY ASKS INJUNCTION AGAINST THE NATIONAL.

Another development in the struggle between the Illinois Brick Company and its former officers has come in the Circuit Court in the form of a bill for injunction. The court has been asked to tie up by a writ the operations of the National Brick Company.

It was a disagreement between the parties to the injunction suit which led to proceedings before the grand jury last month and brought about the indictment of George C. Prussing, the present head of the $4,000,000 corporation now fighting to keep its enemies from becoming its competitors.

Bernard J. Weber and his associates in the formation of the National Brick Company with $500,000 capital on June 29, are accused of breaking the agreements made by them upon the formation of the Illinois company in 1899, when they are said to have signed papers agreeing not to engage in the manufacture or sale of brick within 100 miles of Chicago for ten years.

In the grand jury inquiry, Weber and others told of the use of a fund of $25,000 for the purpose of influencing labor leaders in the interest of the Illinois company as against its competitors. The suit against the National company is based on allegations that its officers and promoters were paid high prices for their brickyards when the Illinois company was formed, part of the consideration being their agreements to refrain from competition with the big company during ten years.

These are the concerns alleged to have been taken over by the Illinois company, with the prices paid for their properties:

Riemer, Labahn & Kuster, $252,000
John Busse & Sons, $250,000.
Bernard J. Weber, $345,000.

When the Illinois company was formed Weber was made a director. He became vice-president of the company in 1902 and remained until his resignation last January.

Louis Riemer served as manager of the corporation's North Side yards and as assistant superintendent until January.

Henry C. Busse was also a director and superintendent of the sales department until the schism.

Fred Labahn became assistant superintendent of four yards of the Illinois company. He resigned upon the election of President Prussing.

Riemer, Labahn & Kuster, $252,000.

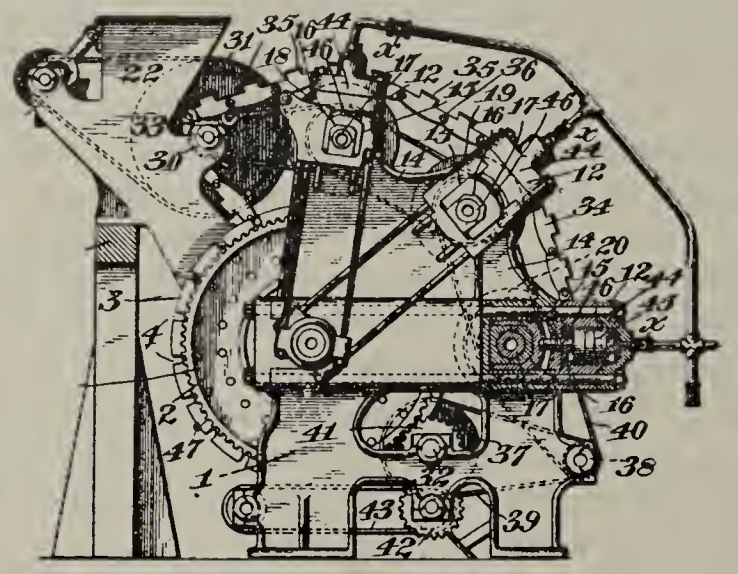
It is alleged the National company has purchased land and prepared to engage in the manufacture and sale of brick, and the Illinois company would have its former employes and officers restrained from any action in violation of their agreement of 1899. No time has been set for argument on the petition for injunction, but summonses were issued for the appearance of Weber, Busse, Labahn and Riemer to make answer to the bill.

The Bickford Fire Brick Co., Lock Haven, Pa., has been incorporated with $5,000 capital stock.

NEW INVENTIONS THAT ARE OF INTEREST TO THE CLAY MANUFACTURER.

These new inventions are those that are especially of interest to anyone engaged in the line of building materials and their manufacture, or machinery to make them:

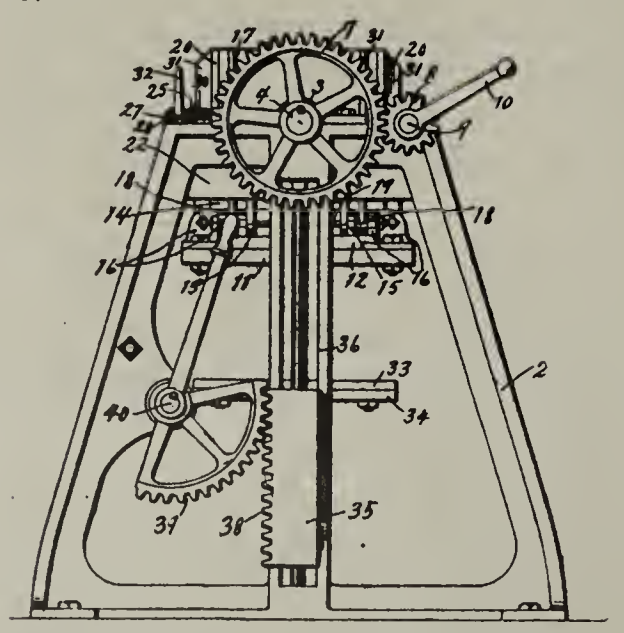
792,153. Brick or Briquet Machine.—Peter McKinnon, South Berkeley, Cal. Filed July 19, 1904. Serial No. 217,220.



Claim.—In a brick-machine, the combination with a rotary mold-wheel provided with a plurality of pockets, of an endless chain of plungers one or more of which are adapted to enter the pockets, extended pintles linking said plungers together, and means on the mold-wheel for engaging said extended pintles whereby the plungers are centered in the pockets.

In a brick-machine, the combination with a rotary mold-wheel having a plurality of pockets, of a hopper adapted to convey material to said pockets, bearings on said hopper, a tubular screw conveyor mounted within said bearings and adapted to force the material to said pockets, a reciprocating plunger mounted within said tubular screw conveyor, a forked arm pivoted to said hopper and connected to said reciprocating plunger, and means for reciprocally operating said forked arm.

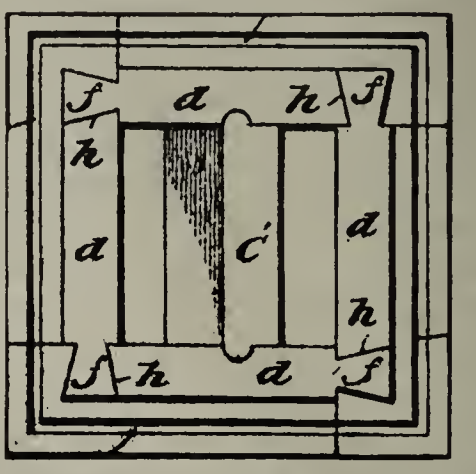
792,151. Machine for Molding Plastic Blocks. Joseph M. McDowell, Columbus, Ohio. Filed May 19, 1904. Serial No. 208,710.



Claim.—In a machine for molding plastic blocks, the combination with supports, of an invertible frame pivotally mounted upon the supports, fixed cores associated with the frame, a mold-box arranged about the cores having side and end doors hinged adjacent to its bottom, means for inverting the frame and mold-box, and means for opening the doors outward when the mold-box and frame have been inverted.

In a machine of the type set forth, the combination with a frame having guideways, of brackets swingingly mounted upon the frame, a mold-box having fixed cores and hinged side and end doors supported upon the brackets, means for moving said doors also supported from the brackets, means for swinging the brackets, sliding blocks mounted in the guideways of the frame, a platform supported by the blocks, and means for moving the blocks.

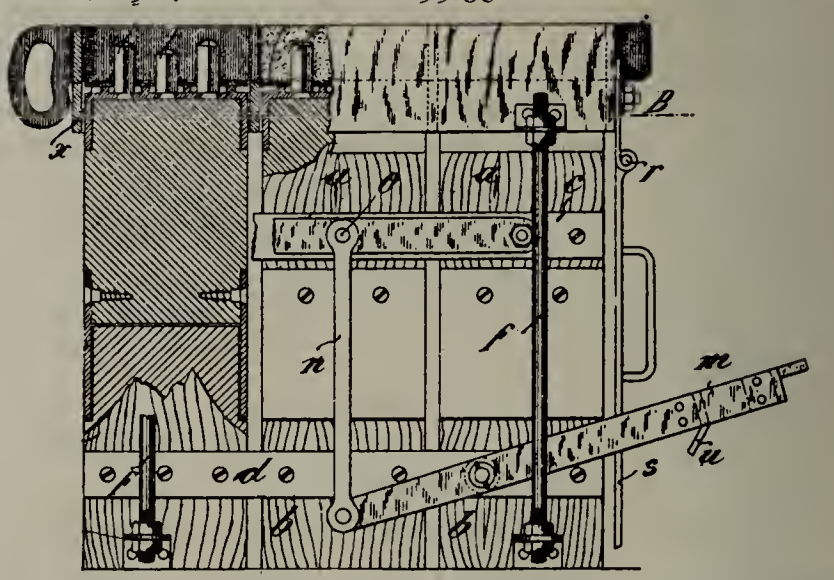
792,342. Building-Block and Chimney.—Charles H. Nesselroad, Stuart, Iowa. Filed Jan. 11, 1905. Serial No. 240,600.



Claim.—A building-block comprising an exterior body portion having an arm at one end, and an interior body portion extending above the exterior portion and arranged with its lower edge above that of said exterior portion and having a tenon at its outer end and also having its inner end arranged at a distance from the arm of the exterior portion, whereby a groove is formed between the two.

In a chimney, the combination of superposed courses of blocks; the blocks of the courses being relatively arranged to break joints around the corners of the chimney, and each block comprising a body having a depending exterior flange, an upwardly-extending inner portion, an arm at one end, a tenon at the opposite end, arranged in the same vertical plane as the arm, and a groove at the inner side of the arm receiving the tenon of a complementary block.

792,221. Molding-Machine for Manufacturing Building-Stone. Jergen P. Jorgensen, Wedel, Germany. Filed March 22, 1904. Serial No. 199,351.

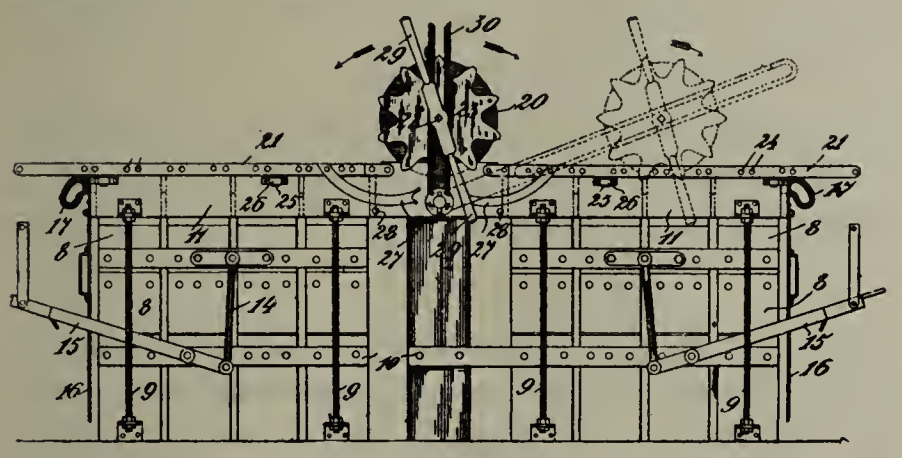


Claim.—In a machine for manufacturing building-stones, the combination with the mold-box, of bottom plates loosely fitted within the mold-box, a solid lower supporting-block, a solid upper supporting-block normally resting with its entire under surface in contact with the entire upper surface of said lower block, means rigidly connecting the mold-box to the lower block, and means for reciprocating the upper supporting-block and the bottom plates within the mold-box.

In a molding-machine for manufacturing building-stones, the combination with the mold-box, of removable diaphragms fitted in the mold-box, a plurality of bottom plates loosely fitted within the mold-box, a plurality of fixed lower supporting-blocks, lateral slats securing said blocks together, a plurality of upper supporting-blocks normally resting on said

lower blocks and having telescoping connections with the mold-box and the lower blocks, lateral slats securing said upper blocks together, a plurality of rods secured to the lower blocks and to the mold-box for rigidly connecting said parts, a foot-lever pivoted to the lower blocks and connected with the upper blocks for imparting vertical reciprocation thereto, and a lever secured to the mold-box and adapted to engage said foot-lever for securing the upper blocks in an elevated position.

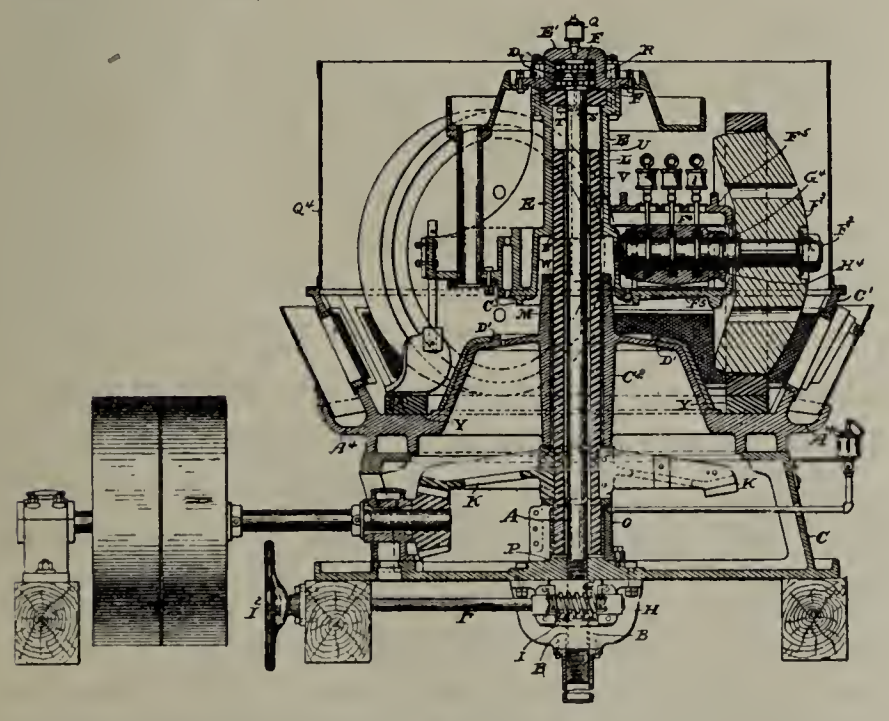
792,222. Roller-Press for Manufacturing Cement Bricks or the Like.—Jorgen P. Jorgensen, Wedel, Germany. Filed Jan. 30, 1905. Serial No. 243,448.



Claim.—In a press for manufacturing bricks, slabs and other plates, the combination of molds divided into compartments, with oscillatingly-arranged frames for the molds, a to-an-fro-moving shaft with several press-rollers, which roll over the molds, but between the frame, a toothed wheel fastened on the said shaft and which engages with bolts or pins on the said frames, an ejector for lifting the bricks out of the molds, substantially as set forth.

In a press the combination of molds divided into compartments, with oscilliatingly-arranged frames for the molds, pins on these frames which engage with holes on the molds, and thus unite the frames with the molds, a to-and-fro-moving shaft with several press-rollers, two connecting-links oscillating on the frame of the press and which surround and guide the said shaft, a toothed wheel fixed on the said shaft, engaging with bolts or pins on the mold-frames, an ejector for lifting the bricks out of the molds, substantially as and for the purpose set forth.

792,161. Chilian Mill.—Stephen H. Pitkin and James H. Stratton, Akron, Ohio, assignors to The Wellman-Seaver-Morgan Company, Cleveland, Ohio. Filed Aug. 19, 1904. Serial No. 221,445.

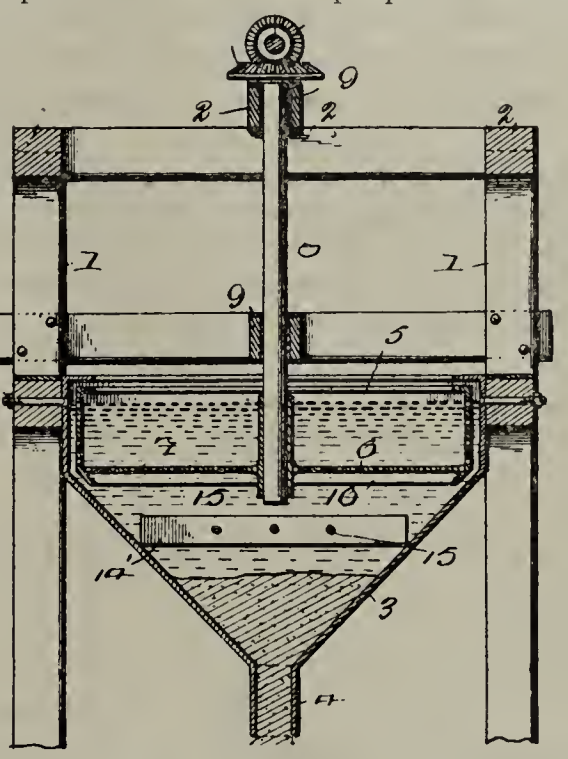


Claim.—The combination with a pan or mortar, a drive-head carrying crushing-rolls and a driving-sleeve having a feather connection with said drive-head, of a spindle passing centrally through the driving-sleeve and engaging the drive-head, and means engaging said spindle near its lower end for adjusting same vertically.

The combination with a pan or mortar, a drive-head carrying crushing-rolls and provided with a removable cap, and a driving-sleeve having a spline-and-groove connection with head, of a spindle passing through the drive-head and provided with a thrust-ring, the latter resting within the removable cap, and means engaging the lower end of said spindle for adjusting same vertically.

792,031. Clay-Washing Machine.—Charles B. Herrick and James W. Baldwin, Ottawa, Ill. Filed Nov. 15, 1904. Serial No. 232,843.

Claim.—The herein-described clay washing and separating machine comprising a suitable frame; a stationary tank secured in position by the frame and having a discharging-orifice at its lower end and adapted to be filled with water, in combination with a perforated tank rotatably mounted in the upper end of the stationary tank; means to rotate said perforated tank; an agitator-blade co-operating with the contents of the perforated tank; a diaphragm separating the upper and lower portions of the stationary tank whereby the water below the diaphragm will be left unagitated substantially as specified and for the purpose set forth.



In a clay washing and separating machine, a frame, a stationary tank secured to said frame, the lower end of said tank being tapered, the extreme lower end of said tapered portion converging into an outlet-orifice, a perforated tank rotatably mounted in the upper end of said stationary tank, means to rotate said perforated tank, an agitator secured to said frame and disposed in co-operation with the contents of the perforated tank, and a diaphragm separating the upper and lower portions of the stationary tank whereby the water below the diaphragm will be left unagitated, all combined substantially as and for the purpose set forth.

THE C. W. RAYMOND CO.'S NEW CATALOGUE.

The 1905-1906 new catalogue of the C. W. Raymond Company, Dayton, Ohio, is now out. It is a complete and exhaustive compendium of high-class brick and clay working machinery. It contains machinery for making stiff mud brick, the soft mud process, pottery and cement making machinery.

The catalogue contains about one hundred and fifty pages of everything that is used in connection with a clay plant. If you are interested in anything in this line you may have one mailed to you by the simple asking for it and mentioning the Clay Record.

CLAY RECORD.

PUBLISHED SEMI-MONTHLY BY THE

CLAY RECORD PUBLISHING COMPANY,

Ninth Floor, Plymouth Building,

303 Dearborn Street,

CHICAGO.

GEORGE H. HARTWELL, Editor.

SUBSCRIPTIONS.

Send One Dollar bill or stamps for United States, Canada or Mexico and one dollar fifty cents for all other foreign countries.

Papers are not stopped at the end of subscriptions unless the subscribers order them so and pay up the arrearages.

ENTERED AT THE CHICAGO POST OFFICE AS SECOND-CLASS MATTER.

Vol. XXVII. JULY 14, 1905. No. 1

"I like to read American advertisements. They are in themselves literature, and I can gauge the prosperity of the country by their very appearance."—William E. Gladstone.

When times are dull and people are not advertising is the very time that advertising should be the heaviest. Ninety-nine out of every hundred merchants advertise most when there is least need of it, instead of looking upon advertising as the panacea for their business ills.—John Wanamaker.

Plan your work, then work your plan.

Men bet on horses, but horses never bet on men. Horses have horse sense.

Life is too short to nurse one's misery. Hurry across the lowlands that you may spend more time on the mountain tops.

Many a man after spending the best years of his life in climbing the ladder, suddenly lets go and reaches the bottom again in a few seconds.

The Clay Record is the only semi-monthly clay journal published in America. It costs one dollar for twenty-four numbers. Can you afford to be without it?

We need not say to our readers that, when the temperature ranges in the eighties and nineties, material around the brick yard, already surcharged with heat, becomes exceedingly inflammable; and warning signals must be flung to the breeze, and caution must be exercised anywhere and everywhere about the yard.

We are satisfied many losses recorded in the past could have been averted if only a little thought and care had been exercised, and to make a record of the year 1905 will not each resolve himself into a committee of one to see to it that the fire loss is kept down below any previous experience in recent years?

Commercial insolvencies in the United States in the first half of the year 1905 were 6,210 in number and $55,904,585 in amount of defaulted indebtedness. Numerically this shows scarcely any alteration in comparison with the 6,214 failures in the corresponding six months of last year, but a most encouraging decrease appears when last year's liabilities of $79,490,909 are considered.

Looking over the government statistics indicating the building operations in the several large cities for the first half of this year, and comparing these with those of last year, we find that St. Louis' increase is 88 per cent; Chicago, 60, and Cincinnati, also 60 per cent.

The foregoing, notwithstanding some few strikes on the carpet; and who shall say the West is not prospering, if he would speak truly.

We said to our readers sometime ago, when we were advising them to leave bonds and stocks alone, that we were going to improve in a business way, and it has been verified.

We have this additional, that in our opinion the situation is to improve still more, not that we are to experience anything like a boom, but there will be a steady, safe and prosperous development along commercial and manufacturing lines.

Time glides swiftly and it is with difficulty one appreciates its flight. Here it is, *fourteen* years since the publication of the CLAY RECORD, and scarcely is it realized, so busy have been the intervening days and nights. That it has been a long and steady pull, mixed with blood and sweat, producing the results, we know, but at the same time, and notwithstanding all this, without the liberal and generous assistance of our friends we could not possibly have made of the Clay Record what it is now. We hail with delight the opportunity of thus expressing ourselves, however general it may be, of our appreciation of past favors, and further in appreciation of these we pledge ourselves to continue to build up and add on indefinitely, which pledge we shall be able to keep, if in the future we shall enjoy the loyalty and liberality of our friends measured by the past.

One word as to the advertising space: Have you critically examined any recent issue and noted the steady, sure and certain increase in the advertising space?

ACCIDENTS, DAMAGES AND LOSSES.

The Progress Press Brick & Machine Co., St. Louis, Mo., applied to the court to restrain the Superior Press Brick Co. from interfering with its switch.

The Waxahachie (Tex.) National Bank has filed bill for receivership against the Banner Brick Works of Kennedale, Texas.

A tornado at LaHarpe, Kansas, struck the roof of the Kansas City Brick Co.'s plant, causing quite a loss to same and green brick in buildings.

L. D. Smith was fatally burned by an explosion of powder in the Standard Clay Co.'s mine at Empire, Ohio. He was attempting to show how to flash off spilled powder.

George Seeber, a 16-year-old boy, was nearly burned to death by four arches of a burning kiln giving away and burying him under it at the Jefferson (Wis.) Brick & Tile Co.'s works.

Herman L. Frost, president and manager of the Frost Pressed Brick Co., Des Moines, Ia., has filed a petition in voluntary bankruptcy, giving his liabilities at $21,708, and assets $7,390.

The plant of the Fiske Brick Co. at Dover Point, N. H., was sold at auction to Philip R. Chase of Boston, representing the bondholders; consideration $1,000. The plant was erected three years ago at a cost of $60,000.

The Blackburn Face Brick & Tile Co., Leavittsburg, Ohio, has been made defendant in a foreclosure suit filed at Warren by S. F. Streeter of Cleveland, who asks that the property be sold to pay a mortgage claim of $1,500 and interest.

The three brick plants of the Pennsylvania Clay Co., in Beaver county, were sold at Beaver, Pa., at receiver's sale for $31,000. They were bid in by the receiver, which was made possible by a special order from the court.

FIRE! FIRE!! FIRE!!!

The brick manufacturing plant of Eli H. Zeigler & Son, at Stewartstown, Pa., sustained a loss by fire to the amount of $3,000.

The large brick manufacturing plant of Spencer Brothers at Salem, Illinois, burned to the ground. Loss about $3,000. The fire was caused by lightning. It will be rebuilt at once. Plant was new and only running one month.

The engine house of the Chippewa Brick Manufacturing Company, Chippewa Falls, Wis., was destroyed by fire, causing a loss of several thousand dollars. The fire was caused by sparks from an engine.

OBITUARY.

Christian Solfisburg, a well known and very respected brick manufacturer at Aurora, Illinois, is dead. He manufactured brick for over forty years, was a prominent citizen and director of the Aurora National Bank.

Parish L. Stout, a well known and respected citizen, died at his home in East Belfast, Maine. He was 67 years old. For many years he was the proprietor of a brick yard in East Belfast.

THE HYDRAULIC CEMENT INDUSTRY.

The unsatisfactory condition of the hydraulic cement market last year is reflected in figures just made public by the United States Geological Survey, which show that, although in the American production of 1904 there was a gain of 1,776,117 barrels over that of 1903, in the value of the cement produced there was a decrease of $5,899,421. The statistics, which are preliminary to the Geological Survey's annual report on the production of cement in the United States, are as follows:

The total production of Portland, natural-rock, and slag or Puzzolan cements in 1904 was 31,675,257 barrels, valued at $26,031,920. The production for 1903 amounted to 29,899,140 barrels of hydraulic cement valued at $31,931,341. Of the total amount of cement manufactured in the United States in 1904, 26,505,881 barrels were Portland cement, valued at $23,355,119; 4,866,331 barrels were natural-rock cement, worth $2,450,150, and 305,045 barrels were slag or Puzzolan cement with a value of $226,651.

Although as yet this spring there has been no marked increase in the price of cement, the tone of the market is much improved. In recent years the importance of hydraulic cement as a building material has grown remarkably, and the fact that the outlook is promising for a great deal of building activity throughout the country during 1905, gives reason for the belief that the demand for cement will be much greater than it has been for a year or two.

ANOTHER BRICK-LAYING MACHINE PATENTED.

P. H. Loud of Williston, S. C., has invented a machine that will revolutionize the art of building, in addition to cheapening the cost of construction and the time necessary for the erection of brick structures.

The machine in question lays brick. It is claimed by those who have seen the machine that it will lay brick with all of the skill of the most accomplished bricklayer, with perfect accuracy and with a rapidity that discounts the human hands. The report is to the effect that with two or three men operating the machine, supplying it with bricks and mortar, that it will do the work of a dozen bricklayers in the course of a day, carrying up a wall as if by magic.

It is further claimed that the machine can be easily and quickly regulated so as to skip wherever it is desired to leave doors and windows, doing this work with seeming human intelligence. It is also said that the machine is not complicated, will not easily get out of order, and is in every way a practical and useful invention, sure to come into general use by contractors.

SIX HUNDRED CARS OF BRICK.

The Mack Company of New Cumberland, W. Va., have started shipments on the largest brick order ever received in the valley. The company is furnishing brick for paving certain streets in the city of Wilkesbarre, Pa., and it will take some months to fill the order.

Six hundred cars will be necessary to carry the brick from New Cumberland to Wilkesbarre, and the freight bills alone will amount to $40,000.

WILL SELL BRICK PLANT FOR HOLLOW BLOCK BUSINESS.

The Clay Record,
Chicago, Ill.

With reference to the small advertisement which we inserted in your journal a few days ago, will say that our reasons for desiring to dispose of The Terre Haute Pressed Brick Company's property is that this company is owned by William P. and L. Pettyjohn who are also sole owners of The Pettyjohn Company who manufacture hollow concrete building block machines. The latter business has made such astonishing progress in the last year and the demand for the machines has become so great that we desire to devote all of our time to it and particularly to the establishment of block machine factories in the different foreign countries where we have already obtained patents. The Terre Haute Pressed Brick Company is a plant now running and has been for years and is a very profitable enterprise. At the same time like all other brick factories it requires constant and assidious attention and more time than we have been able to give it since we have been interested in the manufacture of building block machinery. We are willing to sacrifice the profits we could make from a brick company to obtain greater profits in our other line of business and it presents an exceptional opportunity for some one who is desirous of going into a brick business to take hold of a running and profitable enterprise with an established and desirable trade already worked up.

We do not know of any more desirable property that has been offered for sale in some years, and would not think of selling our brick property, but for the reasons explained.

Thanking you for past favors, we are,

The Terre Haute Pressed Brick Co.

TO LAY PRISON-MADE BRICK.

The members of the Bricklayers' union have withdrawn their objections to laying prison-made brick in the construction of state buildings at Springfield, Ill., and a serious problem has been averted. When it was announced that prison-made brick would be used in the construction of the new dairy building on the state fair grounds the union bricklayers raised objection to laying the prison-made product.

The State Federation of Labor, however, had sanctioned the manufacture of brick by convict labor and the state organization brought about a settlement of the question. Under the statutes prison-made brick must be used in the construction of all state buildings hereafter.

RODGERS FOR DRYERS.

The L. E. Rodgers Engineering Company, 303 Dearborn street, Chicago, have just issued their first booklet of testimonials. While it is not large, it contains many pleasing and convincing words from some of the most prominent brick and clay manufacturers in the United States. They are widely scattered.

If you are interested in drying your clay goods write to Rodgers for dryers and get one of their testimonials.

DENNY-RENTON CLAY AND COAL CO. ACQUIRES PROPERTIES OF DENNY CLAY CO.

Formal transfer of the properties of the Denny Clay Company to the recently organized Denny-Renton Clay & Coal Co., Seattle, Wash., have been completed, and the new company is now in absolute possession of the three plants of the old concern, located at Taylor, Kummer and near Georgetown. The consideration involved in the transfer has not been given out, but the new company has a capitalization of $1,000,000.

Moritz Thomsen, an officer and leading stockholder of the company, stated that extensive improvements would be made immediately on the plant owned by the company at Renton. He said:

"Four kilns with a capacity of 100,000 brick each daily will be constructed at once, and we have perfected arrangements to install additional machinery that will enable us to manufacture all kinds of building material, including ornamental terra cotta. Our plans contemplate other improvements which, when installed, will make the plants the most complete of their kind on the Pacific coast."

The company aims to control the trade of a vast territory at home and abroad in vitrified brick and other building materials. There are very few plants in the whole United States that manufacture terra cotta for architectural decoration. There is one such plant in California, that of Gladding, McBean & Co., of San Francisco, whose works are near Sacramento, and in Portland there is a concern which manufactures terra cotta chimneys and ornamental brick.

The management of the new company is in the hands of Mr. Kummer, who held a similar position with the Denny Clay Company.

COMMUNITIES ON THE CHICAGO & NORTH-WESTERN R'Y TO BE BENEFITED.

An industrial bureau has been established by the Chicago & North-Western R'y, the purpose of which shall be to furnish reliable information regarding the many desirable locations along The North-Western Line for new manufacturing enterprises.

The rapidly-growing cities and the splendid resources of the territory reached by The North-Western Line combine many of the essentials to industrial success. Fine water-power locations that may be supplemented by electrical energy developed therefrom, vast forests of hard and soft timber for all kinds of woodworking concerns, mineral wealth that provides the material for foundry and machine work, coal fields close at hand, and an excellent supply of a good class of labor are all found here.

This feature should prove of much benefit not only to the railway company, but also to the communities along the line, and such of them as have commercial organizations will find ready co-operation by this department.

It will also prove a time-saving convenience to manufacturers seeking new locations or desiring to establish branch establishments, to whom information will be promptly furnished upon application.

BALTIMORE FIRMS WILL CLOSE SHOP AT ONE O'CLOCK.

Announcement is made of the agreement entered into by various Baltimore, Md., firms in the lime and cement business, whereby during the months of July, August and September warehouses will be closed and no deliveries made after 1 p. m. by the following firms:

National Building Supply Company, Maryland Lime and Cement Company, John Bullock & Son, W. W. Clarke & Son, Joseph T. Flautt & Co., Northeastern General Supply Company, Thomas M. Dinsmore & Co., George M. Hay and Robert S. Green.

UNION FINES BRICK COMPANY.

A fine of $240 has been imposed on the Labahn Brick Company, Chicago, by the Brickmakers' Union as a result of the alleged action of the company in making 1,000,000 brick larger than was agreed on. According to union officials their agreement provides a fine of 24 cents a thousand brick, and Business Agent Hank says that unless this is paid there will be a strike. It also is charged that the company employs too few men on each kiln.

OPERATIVE POTTERS ELECTED OFFICERS.

Officers of the National Brotherhood of Operative Potters were elected as follows: President, T. J. Duffy, East Liverpool, O.; first vice-president, F. H. Hutchins, of Trenton, N. J.; second vice-president, S. W. Crawford, East Liverpool, O.; third vice-president, H. Halles, Wheeling, W. Va.; fourth vice-president, Thomas Humphrey, Trenton, N. J.; fifth vice-president, S. M. Moore, East Liverpool, O. Other officers, including a secretary and treasurer and a sixth vice-president, were also elected. President Duffy addressed the delegates following the election and extended his thanks.

The action of the national officers and the local body in the Ford City strike was endorsed by the convention.

WORLD'S LARGEST BRICK YARD BEGUN.

Preliminary work in establishing the largest brick-making plant in the United States at Chicago Heights, Illinois, is under way. The enterprise is backed by the National Brick Company, some members of which including its president, Bernard F. Weber, formerly were connected with the Illinois Brick Company. The National will be independent of the combination, and it is said to be securely enough intrenched to make its competition strongly felt at the start.

The National Brick Company was recently incorporated under the Illinois laws. It will spend more than $200,000 in establishing its plant, which will occupy forty acres of land in the manufacturing suburb. The capacity of the plant will be 600,000 brick a day.

The Chicago Terminal Transfer Company has planned to extend its railway southward from its present terminus at Sixteenth street in Chicago Heights to a connection with the Southern Indiana road, which is being constructed northward to Chicago Heights. The connection will be made immediately east of the National Brick Company's site.

POTTERY NEWS ITEMS.

The Shackleford Brick Co., Des Moines, Iowa, propose to experiment with the making of pottery ware.

The Windsor Pottery Works, East 12th St., Oakland, Cal., are enlarging their works.

Des Moines, Ia., capitalists have organized a company with provisions for $100,000 capital, for the exploitation of a bed of clay recently found within the limits of the city.

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A number of residents of Taylorville and Duncan Falls, Ohio, are interested in building at the former place a pottery plant.

The Veedersburg (Ind.) Pottery Co. has been incorporated with $50,000 capital stock. The directors are Wm. J. Lemp, Jr., A. H. Bauer, C. C. Orthwein, W. P. Whitney and R. D. Culver.

The Peerless Pottery Co., capital stock $25,000, has been incorporated at Camden, N. J., by James H. Lalley, and John H. Lalley of Philadelphia, Pa., and John Rhead of Camden.

Turley & Sons of the Burlington (Pa.) Pottery Co. have sold same to Guy Lemmer and Frank Gelhart of Macomb, Ill., who have changed it from a stoneware to a flower-pot factory.

The plant of the Barberton O.) Pottery Co. is again in operation. John Horwell is the manager, Geo. C. Murphy having resigned soon after the financial trouble in which they are involved. The company deny that it is bankrupt.

The Globe Pottery is the name of a new company that will build at Crooksville, O. They will expend some $30,000 on the plant. A. E. Hull is at the head of the enterprise. They will manufacture domestic ware only.

Public administrator McGarvin, Los Angeles, Cal., is endeavoring to locate the relatives of Gus Sandquist, formerly a director in the East Main Street Pottery Co., who died several months ago. The estate amounts to $8,000.

The Knoxville (Tenn.) Pottery Co. has begun operation at its plant in Oakwood. The capacity is 15,000 gallon jugs per week. The officers are R. H. Cate, president; W. B. Caldwell, secretary and treasurer, and W. H. Weaver superintendent.

Three of the stockholders, representing 20 per cent of the stock of the Progressive Pottery Co., Roseville, Ohio, have asked for a receiver and the winding up of the company, claiming that the management of the concern is squandering the property.

The Pennsylvania China Co. Pittsburg, Pa., has been granted a charter with a capital stock of $10,000. The new company will take over under lease the Wick Pottery Works at Kittanning. The directors are H. L. Sherod, W. A. Steinmeyer, B. R. Ewing, John G. Vollmer and James S. Crawford.

BALTIMORE FIRMS WILL CLOSE SHOP AT ONE O'CLOCK.

Announcement is made of the agreement entered into by various Baltimore, Md., firms in the lime and cement business, whereby during the months of July, August and September warehouses will be closed and no deliveries made after 1 p. m. by the following firms:

National Building Supply Company, Maryland Lime and Cement Company, John Bullock & Son, W. W. Clarke & Son, Joseph T. Flautt & Co., Northeastern General Supply Company, Thomas M. Dinsmore & Co., George M. Hay and Robert S. Green.

UNION FINES BRICK COMPANY.

A fine of $240 has been imposed on the Labahn Brick Company, Chicago, by the Brickmakers' Union as a result of the alleged action of the company in making 1,000,000 brick larger than was agreed on. According to union officials their agreement provides a fine of 24 cents a thousand brick, and Business Agent Hank says that unless this is paid there will be a strike. It also is charged that the company employs too few men on each kiln.

OPERATIVE POTTERS ELECTED OFFICERS.

Officers of the National Brotherhood of Operative Potters were elected as follows: President, T. J. Duffy, East Liverpool, O.; first vice-president, F. H. Hutchins, of Trenton, N. J.; second vice-president, S. W. Crawford, East Liverpool, O.; third vice-president, H. Halles, Wheeling, W. Va.; fourth vice-president, Thomas Humphrey, Trenton, N. J.; fifth vice-president, S. M. Moore, East Liverpool, O. Other officers, including a secretary and treasurer and a sixth vice-president, were also elected. President Duffy addressed the delegates following the election and extended his thanks.

The action of the national officers and the local body in the Ford City strike was endorsed by the convention.

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SAND OR LIME-BRICK OR BLOCK NEWS.

The Peoria (Ill.) Granite Brick Co. has been incorporated with $250,000 capital stock by I. L. Fairbanks and others.

The Flint (Mich.) Sandstone Brick Company are now turning out 16,000 brick per day at their sand-lime plant.

The American Pressed Brick Co., Michigan City, Ind., has just received an order for one-half million cement brick to be used in the armory at Louisville, Ky.

The Menominee (Mich.) Brick Co., has made arrangements for a sand dryer to be used in connection with their sand-lime brick plant.

The Rock County Granite Brick & Stone Co., Janesville. Wis., will soon commence the manufacture of brick at their Main street factory. They use the Huennekes system.

C. L. Edmunds, Connellsville, Pa., is organizing a company to make artificial stone from cement and other ingredients, after a formula which he has discovered.

The sand-lime brick plant at North Judson, Ind., costing $35,000, is now running successfully. It has a capacity of 30,000 brick daily. The Semi-Steel Co., of Cleveland, Ohio, had the contract for the plant.

The Jacksonville(Ill.) Sand-Cement Brick Company has been incorporated with $12,000 capital stock. The incorporators are: T. H. Buckthorpe, W. H. Cocking, and G. A. Miller. They are also the first board of directors.

The Camden County Brick Co., Haddonfield, N. J., will begin brickmaking at their new plant near Orchard station, on the Medford railway, at once. Everything is considered of the best.

The Jacksonville (Fla.) Seminole Press Brick Company, capital stock $30,000, has been formed, to make brick and artificial stone. Incorporators are R. Cay, C. B. Rogers, W. F. Cochran, and J. K. Munnerlyn.

The Hartford (Ct.) Sand-Lime Brick Co. has been incorporated with $25,000 capital stock. The officers are: Walter H. Judson, president; Henry F. Smith, treasurer, and W. T. Holliday, secretary.

The Sandy Hill (N. Y.) Brick Co. has increased its capital stock from $10,000 to $30,000. This is a sand-lime brick plant of which W. J. Gallagher is president, and A. H Perigo the secretary.

The Savannah (Ga.) Limestone Brick Co. has been incorporated with $30,000 capital stock by Geo. B. Whatley, John F. Tietjen, John A. Goette, John H. Entelman, Isaac D. La Roche, Chas. S. O'Connell and Frederick H. Opper. The office is at suite 20, Providence building.

AIR WASHERS AND AIR FILTERS.

Air Washers and Air Filters are the subject of a new circular which has been issued by the New York Blower Company. It shows the different devices for wet and dry process and gives valuable information to those interested in the question of cleaning air for heating, ventilating, drying, etc.

The circular will be sent by applying to the New York Blower Co., Twenty-fifth place and Stewart avenue, Chicago.

MISCELLANEOUS ITEMS.

The Lundy & Mizner Brick Co., Knoxville, Tenn., are making a large number of improvements to their plant.

C. Naden and others are establishing a brick yard at Danbury, Neb.

Carl Connard has sold his interest in the tile works at Ridgeway, O., to his partner, Charles Roesch.

The Mexico (Mo.) Brick & Fire Clay Co., has increased its capital stock from $25,000 to $100,000.

Geo. W. Songer of Hoopston, Ill., is now at Rosenberg, Texas, erecting a tile factory.

The Bessemer Fire Brick Co.'s plant at Ensley, Ala., has been shut down two weeks for repairs.

Herman Gerbsch, Stettin, Wis., is now turning out a fine brick at his new plant and is ready to receive orders.

The Adams Bros. & Payne Co., proprietors of the Roanoke (Va.) Brick Works, are making arrangements to increase the capacity of the output.

Supt. Sheedy of the Wyoming division of the Colorado & Southern railway, announces that Denver capitalists are to build a fine pressed brick plant at Cheyenne, Wyoming.

The Standard Paving Brick Co., Coffeyville, Kansas, has a modern new plant in operation. David E. Marshall, formerly a St. Joseph, Mo., contractor, is the manager.

The Garfield Brick Co., Akron, O., has increased the capital stock of their company from $20,000 to $65,000. J. B. Harding is president and A. C. Lamb, secretary.

The Granite Brick Co., Columbus, O., has been incorporated with $40,000 capital stock by Calvin Liggett, O. P. Lennox, Otis W. White, M. C. Liggett and J. E. Robinson.

The Neosho (Mo.) Brick & Stone Co. has been incorporated with $2,000 capital stock by John C. Alexander, J. B. Wager, E. F. Hinchman, R. H. Robinson, and others.

The Blue Ridge Enamel Brick Co., office at Stroudsburg, Pa., has issued bonds to the amount of $30,000 for improvements on its plant at Saylorsburg.

C. C. Bowles has taken charge of the brick plant at Holtville, Cal., and is preparing to burn a large number of brick, using oil to burn with.

S. J. Allen and J. A. Frawley of Peru, Kansas, have bought the interest of M. Floyd in the Elk City (Kansas) Brick Works.

The Mills Land & Loan Co. have sold the Sioux Rapids (Ia) Brick & Tile Works to J. A. Wilson of Dows, Ia., and E. Wlson of Triumph, Ill. They will at once enlarge and improve the plant.

The Consolidated Tile & Brick Mfg. Co., Rising Sun, O., has been incorporated with $10,000 capital stock by C. A. Ulch, W. L. Knowles, E. Z. McCrory, C. H. Sadkey and A. R. Williams.

Fred S. Naugle, general manager of the Green & Hunter Brick Co., Thurber, Texas, visited Chicago on his way to New York. Mr. Naugle is making a great success of the plant which is now the largest paving brick plant in the state.

A movement is on foot to establish a brick works at Tecumseh, Neb.

William P. O'Neal, Scottsboro, Ala., has begun the manufacture of brick in that town.

James Mallen and others will establish a brick plant at Bacon Hill, Elkton P. O., Md.

The United States government will soon receive bids for 7,000,000 brick to be used on the Panama canal.

The Storm Lake (Ia.) Tile Co. has been incorporated with $15,000 capital stock by M. F. Fisher and others.

The Graystone Fire Brick & Tile Co., Bellingham, Wash., have placed a crew at work on the site for a brick plant.

I. C. Adams is having more new kilns built at his Wellman, Iowa, tile works, so that he can supply the demand.

The Brazil (Ind.) Clay Co.'s new plant is now under construction and will soon be turning out the finished product.

James Stewart, Aberdeen, Wash., expects to have his new brick plant in operation by August 1. The plant will cost $25,000.

The Kenawha & New River Brick Co., Charleston, W. Va., will erect a new brick plant. E. M. Craig is the general manager.

The Standard Brick Co., Huntsville, Tenn., William Smelley, proprietor, is making arrangements to move his plant to West Huntsville.

Walter Soper has been appointed superintendent of the Porter, Ind., works of the Chicago Hydraulic Press Brick Co., Edward Green retiring.

C. D. Thomason, of Nacogdoches, and S. T. Fleshman, of Center, Texas, have formed a company for the manufacture of brick at the latter place.

A mammoth tile and sewer pipe plant is to be built at Paducah, Ky. Between $150,000 and $300,000 will be invested, and 300 men employed.

The Sunset Brick & Tile Co., Gonzales, Texas, has secured the contract for over a million brick to be used in the improvement of Fort Sam Houston.

The Middlesboro (Ky.) Pressed Brick Works will install additional machinery for increasing its capacity. J. L. Manring has control of the company.

Elmer Westapher, Shambaugh, Ia., has bought the brick and tile yard at that place from Wm. Ritchie. He has been in charge of the yard for several years.

The Fond du Lac (Wis.) Cement Brick Manufacturing Co., whose plant has moved to a clay bank near the city, has turned out its first consignment of clay brick.

Samuel Shannon, Shellsburg, Iowa, who has conducted the brick and tile business at this place for 40 years, has sold the entire property and business to his son, Ed. Shannon.

Andrew L. Crawford has just begun the operation of a fire brick plant at Columbus, Ga., one-half mile west, on Alabama Hill. This makes the sixth plant for Columbus.

The Mars Hill (N. C.) Wood & Clay Working Co., with $25,000 capital stock, has been incorporated by H. M. Fagan, G. W. Carr, S. F. Sprinkle, J. R. Sams and J. W. Anderson.

Chas. W. Stone and associates will build a brick plant south of Bellingham, Wash., on a site recently purchased and tested by them.

The St. Johns (Oregon) Brick & Tile Co. has been incorporated with $5,000 capital stock. Incorporators are W. H. King, N. F. Loy and E. Z. Loy.

A company of capitalists has been organized to establish a clay plant at Diamond, Ind. The town gives a site and exempts them from taxes for ten years.

The Nettleton (Miss.) Manufacturing Co. has contracted for a complete brick machinery outfit. F. B. Worley, of Florence, Ala., has been secured for the manager of the company.

D. E. Bolden, J. Felty, Jr., J. A. Delawder, Austin Brown, Truman West and King Delawder, all of Oakland, Md., have organized a company to make brick at Mountain Lake Park, Md.

I. R. Lamport, who for eighteen months has been the superintendent of the Marion (Ill.) Pressed Brick Works, has gone to Laredo, Texas, to superintend the construction of a large plant there.

The Eastern Architectural Terra Cotta Co., 32 Nassau street, New York city, N. Y., has been incorporated with $15,000 capital stock. Directors are Charles R. Coulter, R. K. Walton and F. A. Wagner.

At Washburn, Wis., tests are being made for a new company. The officers are E. E. Kenfield, president; O. P. Swanby, treasurer, and J. A. Sheridan, secretary. H. H. Borgan is the superintendent.

The Phoenix Brick Co., West Hartford, Ct., has been incorporated with $25,000 capital stock by Russell A. Moore, Jr., Wm. P. Felt and Robert Price. They have purchased the Hartford Brick Co.'s plant.

Field & Co., Eddystone, Pa., have bought the old Chester (Pa.) Brick Works owned by the Price family at 11th and Concord Ave. Orders have been placed for modern brick making machinery to replace the old plant.

The Poudre Valley Brick & Tile Co., Fort Collins, Col., has been incorporated with $100,000 capital stock. The incorporators are F. Hottel, Peter English, F. P. Stover, Frank English and W. P. English, who will be the directors.

The East Brook Clay Co., Salem, O., has been incorporated with $10,000 capital stock to engage in the manufacture and mining of clays. The incorporators are J. B. McNab, L. P. Metzger, John O'Conner, J. J. Rhodes and A. O. Rhodes.

The Hillsboro (N. Dak.) Brick & Tile Co. has recently been organized, with John O. Lee, president; J. L. Johnson, secretary and treasurer, and Manniek Skogen, manager. John Swenson, an experienced brickmaker, of Grand Forks, has been engaged as foreman.

The Santa Cruz (Cal.) Portland Cement Co. has been incorporated with $5,000,000 capital stock. W. C. Webb, Edwin Schwab, W. S. Downing, W. N. Hohfeld and A. F. Morrison, all of San Francisco, are directors. The principle office of the company will be in San Francisco.

MIXERS, DRYERS, CONVEYORS AND ELEVATORS

The C. O. Bartlett & Snow Co., Cleveland, Ohio, U. S. A.

BRICK YARD FOR SALE.

Brick Yard for sale cheap. A bargain to the right party. Good market at hand. For further information address

BRICKMAKER,
Care Clay Record, Chicago, Ill.

FOR SALE.

A good established brick yard, in a city of 40,000 inhabitants, in Illinois. Plenty of clay, and can sell all the brick that can be manufactured. Good reason for selling. For particulars, address

S., care Clay Record,
Chicago, Ill.

FOR SALE.

Profitable running brick plant, 25,000 capacity. Ready sale for entire product. Owner has larger interests requiring attention

TERRA HAUTE PRESSED BRICK CO.
Terra Haute, Ind.

FOR SALE.

One second-hand Hercules Special Brick Machine, manufactured by Horton Mfg. Co. Capacity 30 to 40 thousand per day. Machine in first-class condition. Located in central Pennsylvania. Address

H, care Clay Record.

FOR SALE.

Iron Quaker Brick Machine, manufactured at Wellington, Ohio. Used but little. Cost about $500. Taken under mortgage and will sell for $150.

ANCHOR TRUST CO,
Wichita, Kansas.

FOR SALE.

For sale, reasonable, in condition—
One 5x18 foot Horizontal Tubular Boiler.
One No. 20A Penfield Hollow Brick Machine.
One 14 foot Pug Mill.
One Disintegrator,
One 40 foot Clay Conveyor, with 20 foot belt.
Forty Fire-proofing Dies, with two extensions, pullys, clutches and belting.
Reasons for sale, are making different ware.

R. 611, W. 51st St.,
New York City.

FOR SALE.

For sale—An up to-date brickyard, land and all machinery, at Buchanan, Mich, on the Michigan Central Railway. Can be run by steam or electricity. Owing to the fact that it is owned by a woman who is unable to run it, it can be sold at a bargain.

SCHULZ & PIXLEY,
St. Joseph, Mich.

FOR SALE.

A 20,000 capacity brick and tile plant, located in good Michigan town. Has Stewart patent kilns, plenty of drying sheds, all machinery in good condition, fine clay, good market, established business. Price very reasonable. Address

MICHIGAN,
Care Clay Record, Chicago, Ill.

Machinery For Sale.

FOR SALE.

50 rack cars for 32 inch pallets, capacity 432 brick; track gauge 24 inches.
Also 55 flat cars for soft mud brick, with foot pallets Track gauge 25 inches.
Both styles of cars in first-class repair.

ATLAS CAR & MFG. CO.
Cleveland, Ohio

GIANT MACHINE FOR SALE.

A second-hand No. 2 Giant Auger Brick Machine. Address

"GIANT,"
Care Clay Record, Chicago.

FOR SALE.

Right and left-hand One, Two and Three Way Switches, of various gauges, radius and weight rail, at special prices.

THE ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

FOR SALE—CHEAP—1200 Steel Crimped Pallets. 10x34 inches. Address

ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

FOR SALE—CHEAP—New and re-laying rails, 12, 16, 20 and 25 pound. For prices, address

ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

FOR SALE.

One 4-Mold Dry Press, very cheap. Good as new.

DEALER,
Care Clay Record, Chicago, Ill.

FOR SALE.

100 Single Deck Cars.
3 Transfer Cars.
1 Centrifugal Pump.

O. W. DUNLAP,
Bloomington, Ill.

WANTED.

A brick and tile plant in exchange for a good Iowa or Illinois farm. Address

FARM,
Care Clay Record, Chicago, Ill.

BOOKS WANTED.

Wanted—A copy of Brick, Tile and Terra Cotta, by Davis. Must be in good condition. State price.

BOOK, care Clay Record,
Chicago, Ill.

Do Your Brick Turn White?

HERE IS THE REMEDY.

PRECIPITATED

Carbonate K.B. C.F.H. of Barytes

The only preventative for scum and discoloration on facing Brick and Terra Cotta; neutralizing the Sulphate of Lime in the Clay and Water.

Circulars and Particulars on Application.

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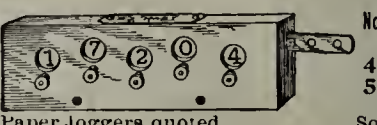


No better made, cut from $3 and $10.00
4 Wheel, $3 00
5 Wheel, $3.25
Guaranteed.
Sold by all dealers

Paper Joggers quoted.
R. A. HART, 41 White St., BATTLE CREEK, MICH

WANTED.

A second-hand three-mold Andrus Press, in good condition. Prefer only Andrus type, as I am already using one on my yard. In naming price give length of time used and present condition.

CHEAP, care Clay Record,
Chicago, Ill.

WANTED.

A sorter and shader to handle light and mottled face brick. Address, with full information as to experience, reference and wages expected.

VERSAILLES FIRE-BRICK & CLAY MFG. CO.
Versailles, Mo.

FOR SALE.

Drain Tile and Brick Plant for sale. Good machinery. Good location. Plenty of clay. Price $2300, small payment down, long time on rest. Will take product as pay. Address

CONTINENTAL,
Care Clay Record, Chicago.

ENGINE FOR SALE.

Engine for sale—One 14x18 inch 80-horse power Frost Engine. Only used a short time.

ENGINE, care Clay Record,
Chicago, Ill.

FOR SALE.

Two 4-mold style "F" American Clay Machinery Co. Dry Presses, in good order. Have made about one million brick. Reason for selling is that clay is not suitable for dry press brick. A bargain for some one.

VERSAILLES FIRE-BRICK & CLAY MFG CO.
Versailles, Mo.

FOR SALE.

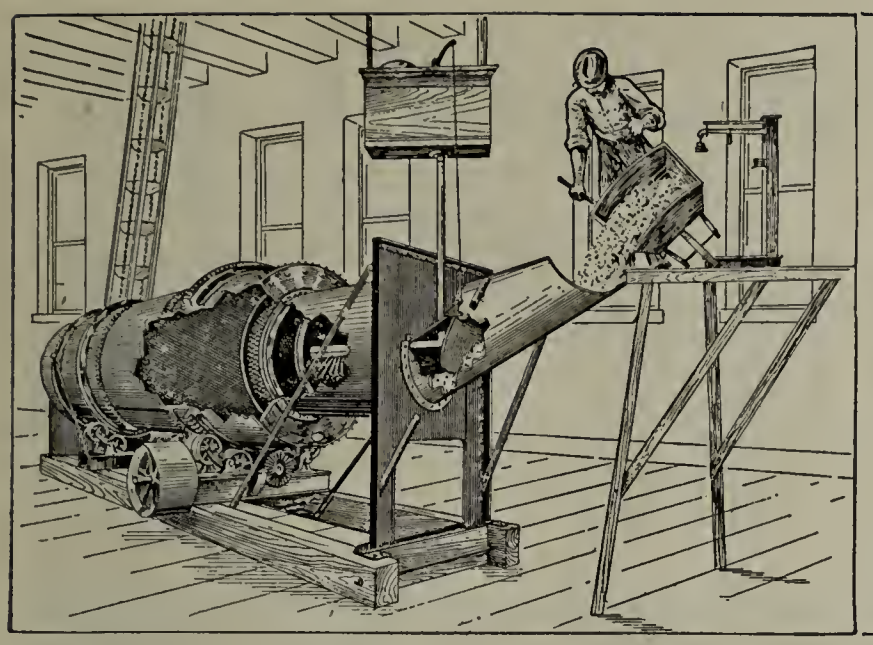
Three 72 Chamber Presses, with rubber gaskets and sacks
One Vertical Double Belt Clay Pump.
Two Steam Clay Pumps.
Two Clay Washers.
All the above machinery used only a short time, and is as good as new. Address

M. S. COMPANY,
Care Clay Record.

ENGINES AND BOILERS.

New and rebuilt Slide Valve and Automatic Engines from 3 to 200 h. p. Boilers of all types, from 5 to 150 h. p. All of our rebuilt machinery is thoroughly overhauled in our own shops by competent mechanics and modern tools. We are now offering some special bargains. Send us specifications to your requirements.

THE RANDLE MACHINERY CO.
1732 Powers St., Cincinnati, Ohio.



HYDRATE YOUR OWN LIME

By the Cheapest and Best Process in Existence.

AUTOMATIC FROM BEGINNING TO END.

The only requisite being the weighing of each wheelbarrow of lime before dumping it into the machine.

The HYDRATOR, as the machine is called, will do the rest.

No grinding, no separating, no free lime.

The lime as it comes from the kilns is fed the machine, the powdered hydrate—freed from all impurities, flows from the discharge end

The process is continuous.

The capacity from one to ten tons per hour, depending upon size of machine.

Especially adapted to sand-lime brick manufacture.

SEND FOR ILLUSTRATED CATALOGUE.

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FOR ALL USES.

LUMP, GRAIN AND GROUND

60-70% 70-80% 80-90% OXIDE.

CLAY WORKERS GOODS A SPECIALTY.

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Something New In Brick Kilns and Dryers

The Dennis Double Chamber Up and Down Draft Brick Kilns and Direct Heat and Hot Air Brick Dryers show many new features that make them superior to all others. Economical, durable and strong in construction and operation, having many points of advantage that appeal to practical brickmakers. Patented April 14, 1903 and September 8, 1903. Brick plants installed and put in operation. Write for booklet. Correspondence solicited.

F. W. DENNIS,

145 Water St., Norfolk, Va.

FOR SALE.

A Fire Clay Grinding Plant, consisting of two Dry Pans (8 feet), one new 50 h. p. Engine, one 60 h. p. Boiler, practically new. Screens, Dryer, Scales and Tracking. Lease of clay where plant is situated. Within 90 miles of Chicago. C. B. & Q Railway. Good reason for selling. Write and come and see me.

GEO. M. REYNOLDS,

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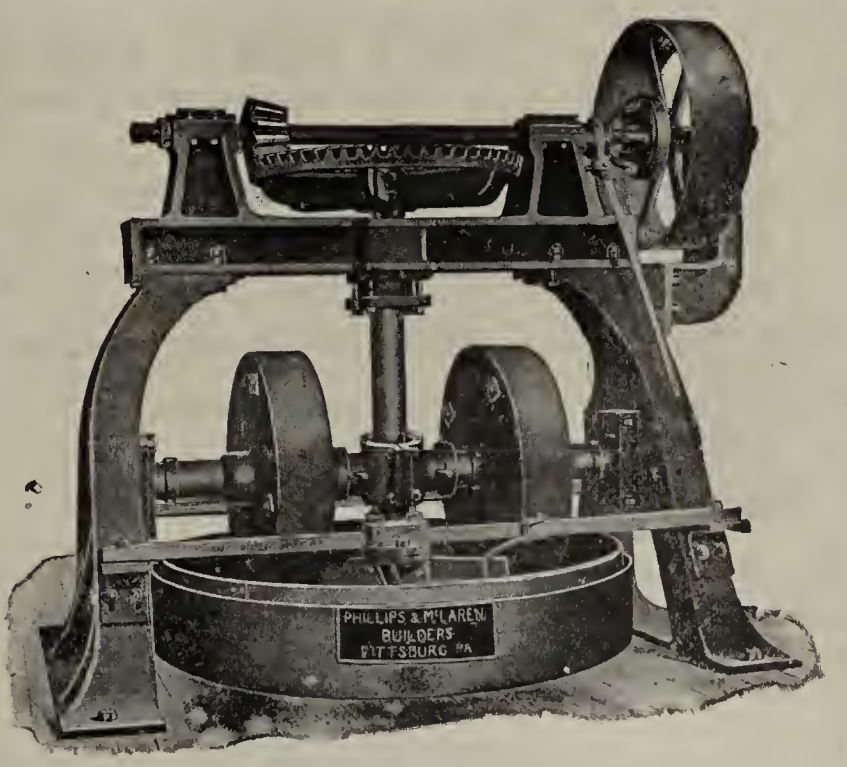

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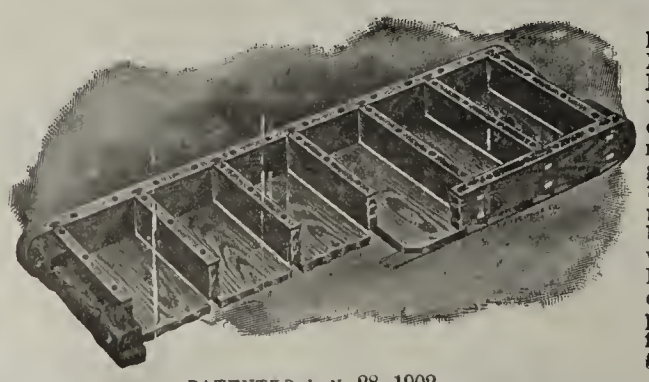

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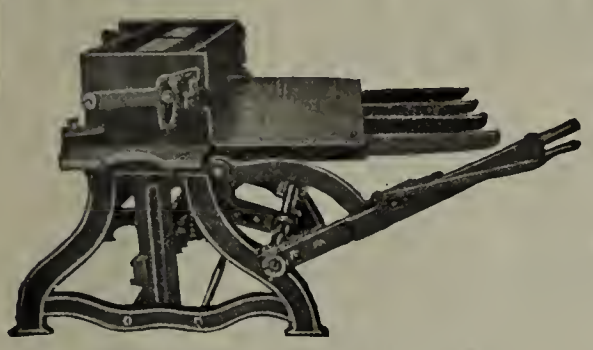

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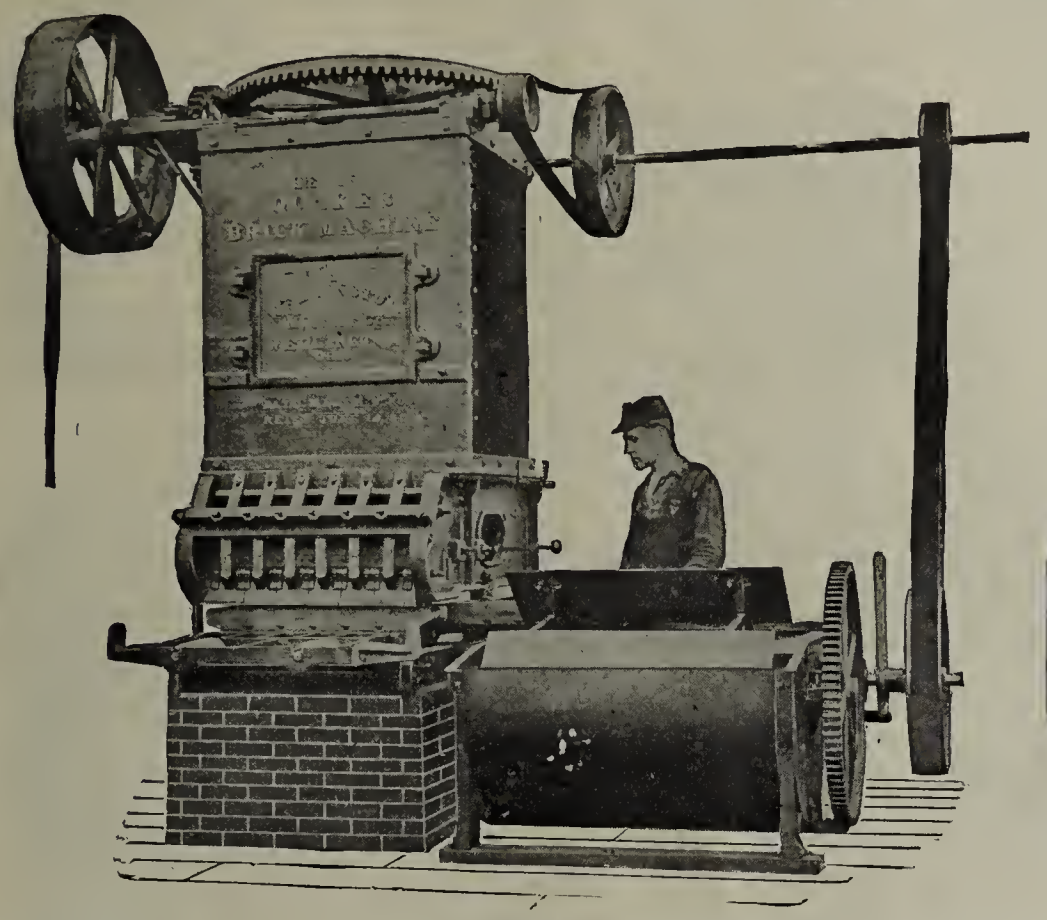

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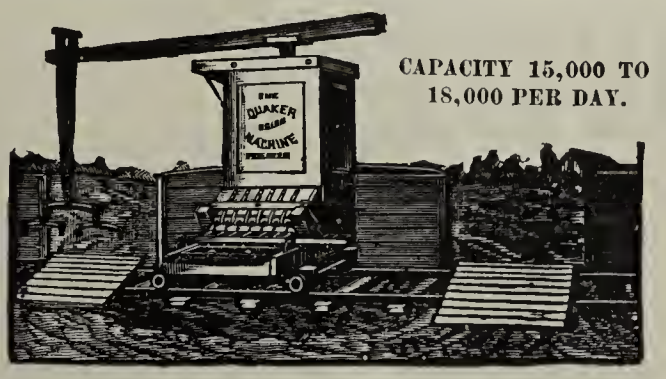

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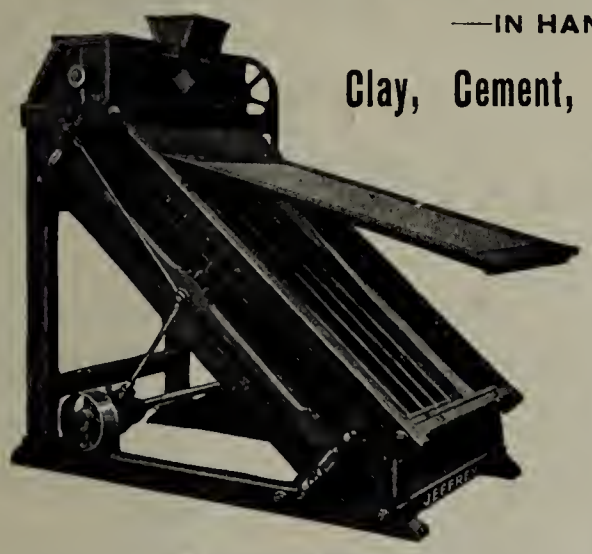

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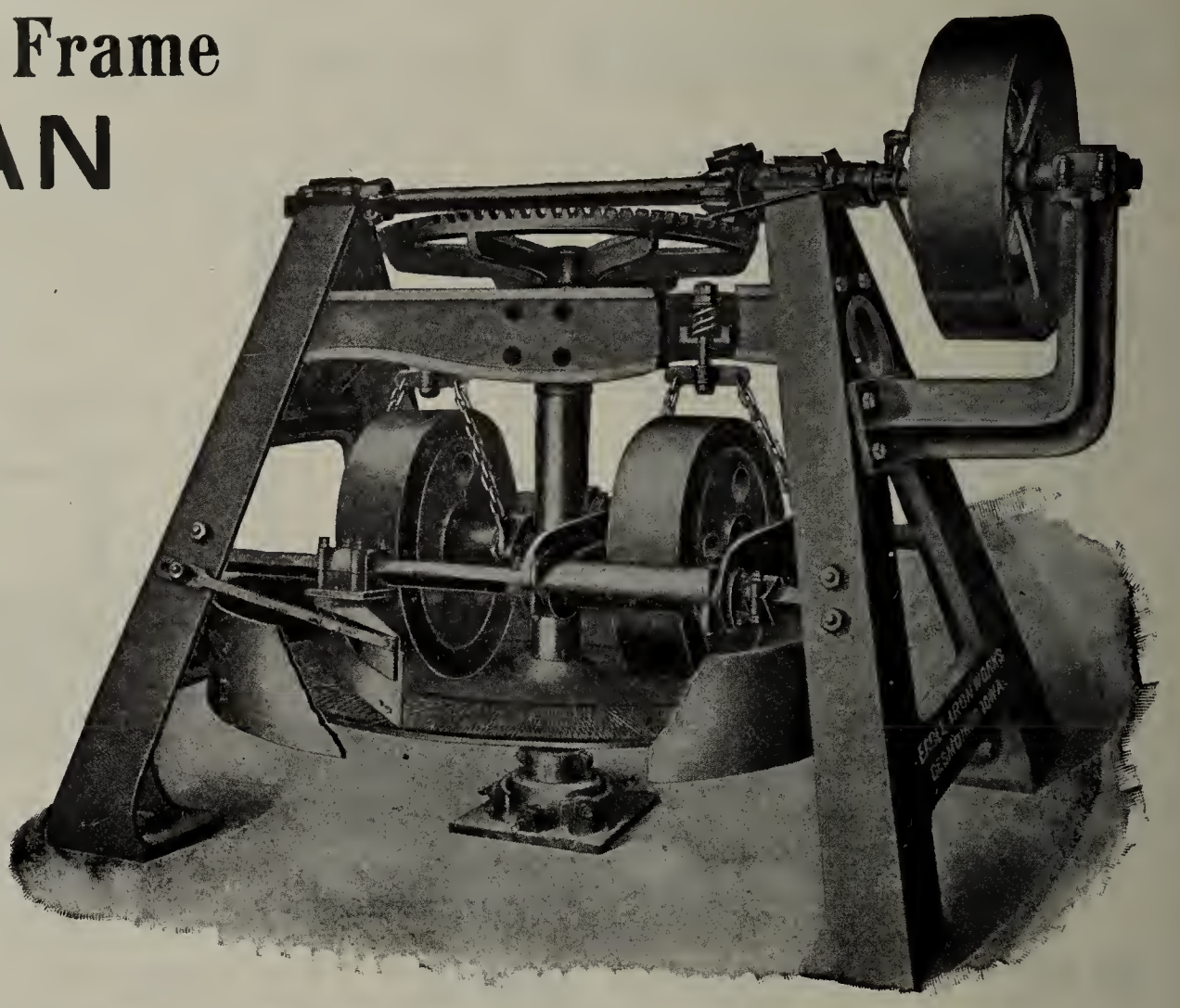

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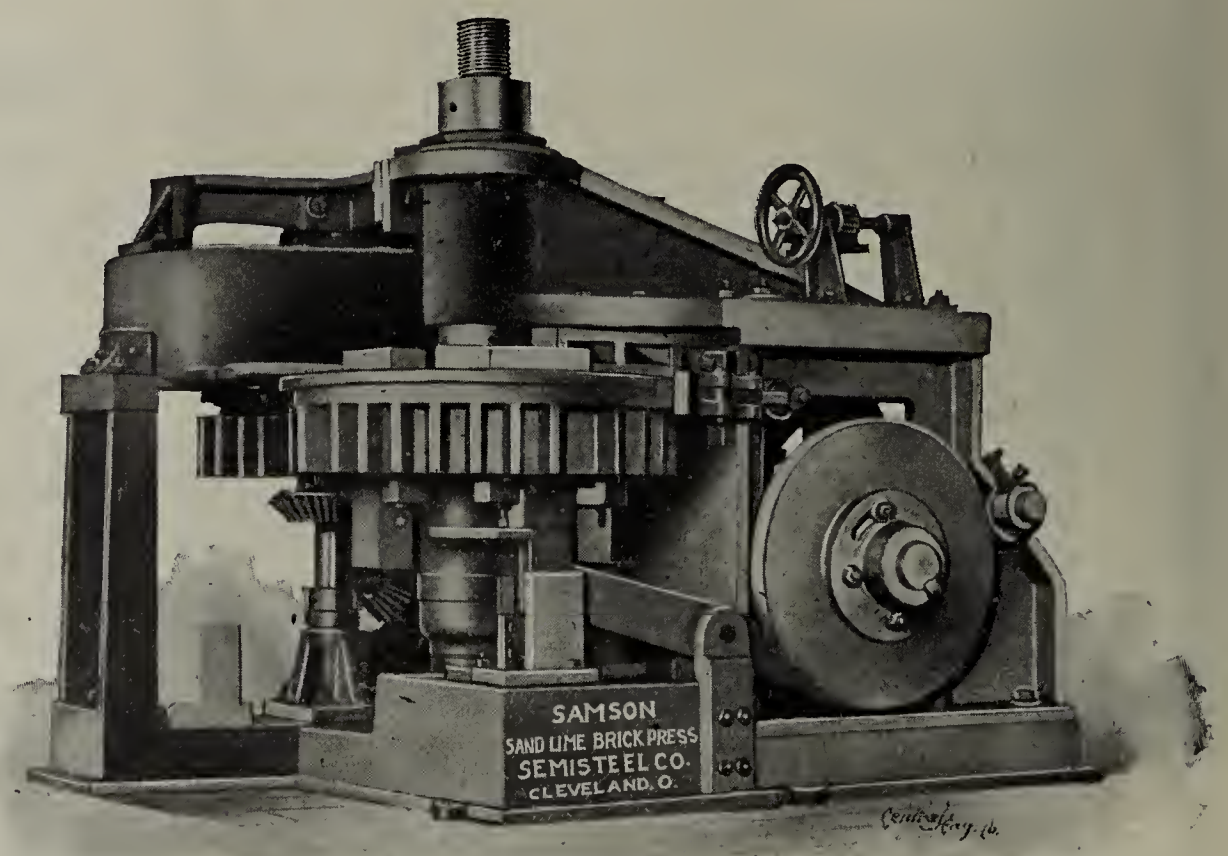

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25 Factories Designed, Equipped and Set in Operation During the Past Year in the United States and Canada.

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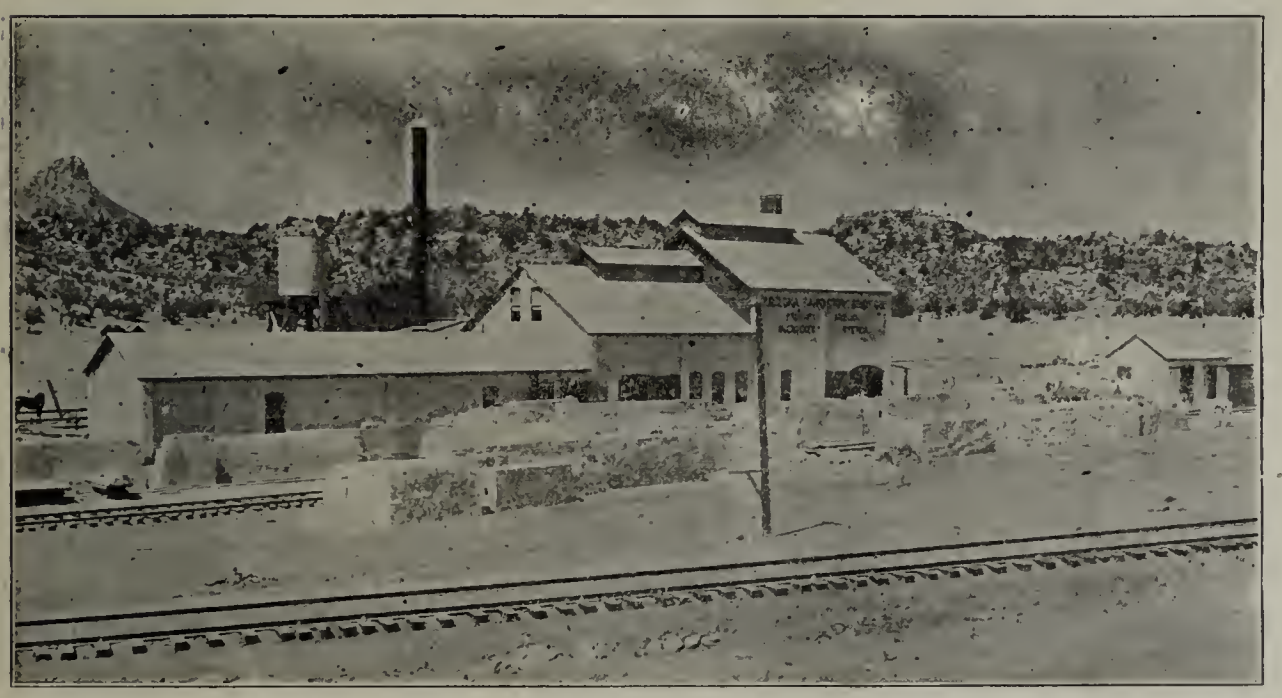

Factory of the Arizona Sand-Stone Brick Company, "Huennekes System" Prescott, Arizona. Finished in Bricks of Their Own Manufacture.

"THINK THIS OVER."

Before the expiration of this year the total combined capacity of the factories erected and operated under the "Huennekes System" will be about 300 million bricks per annum—or a growth of about **2,000 per cent in one year.**

Remember the doubts and scoffings about the "**dry pressed brick**" but a few years ago and the money made by the pioneers in this business.

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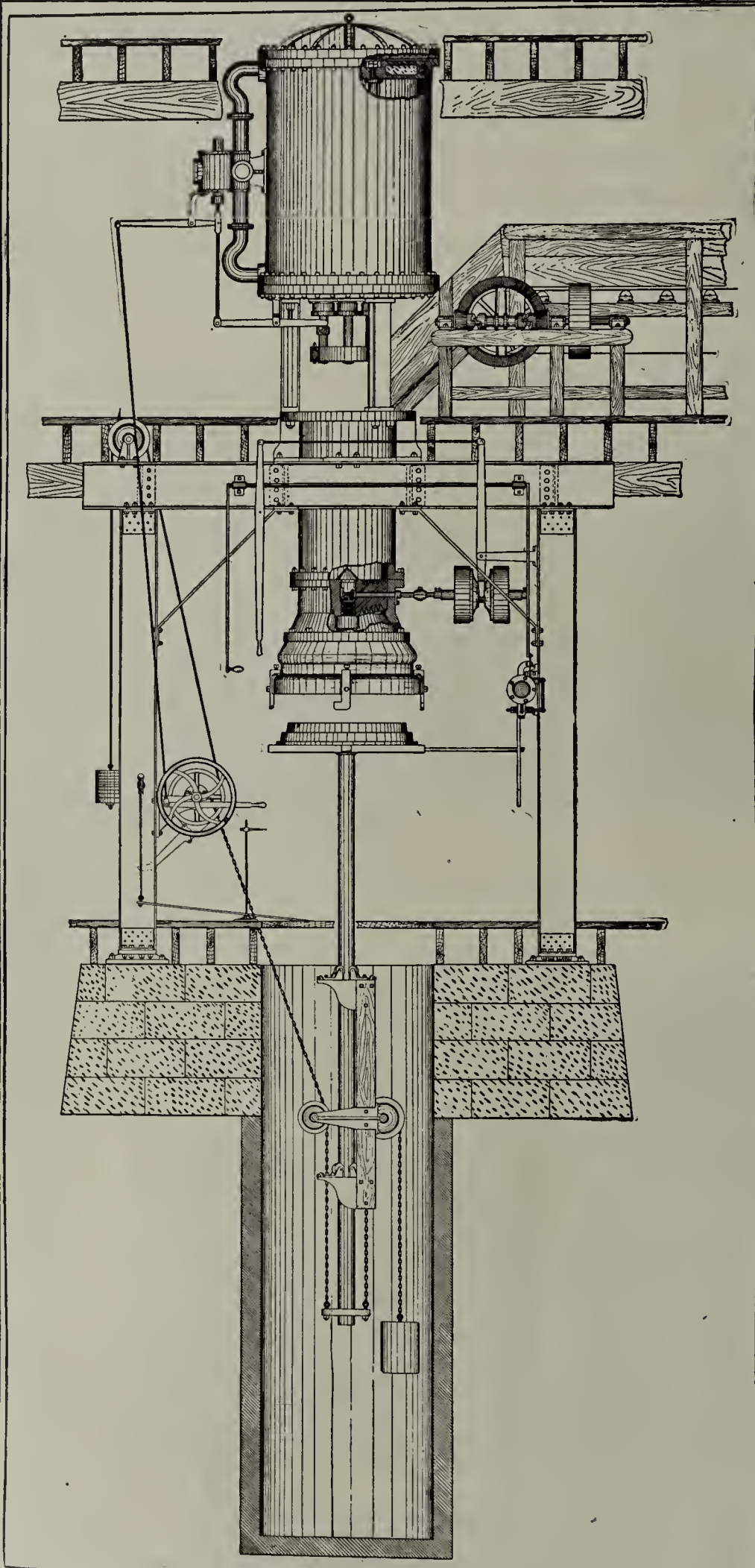

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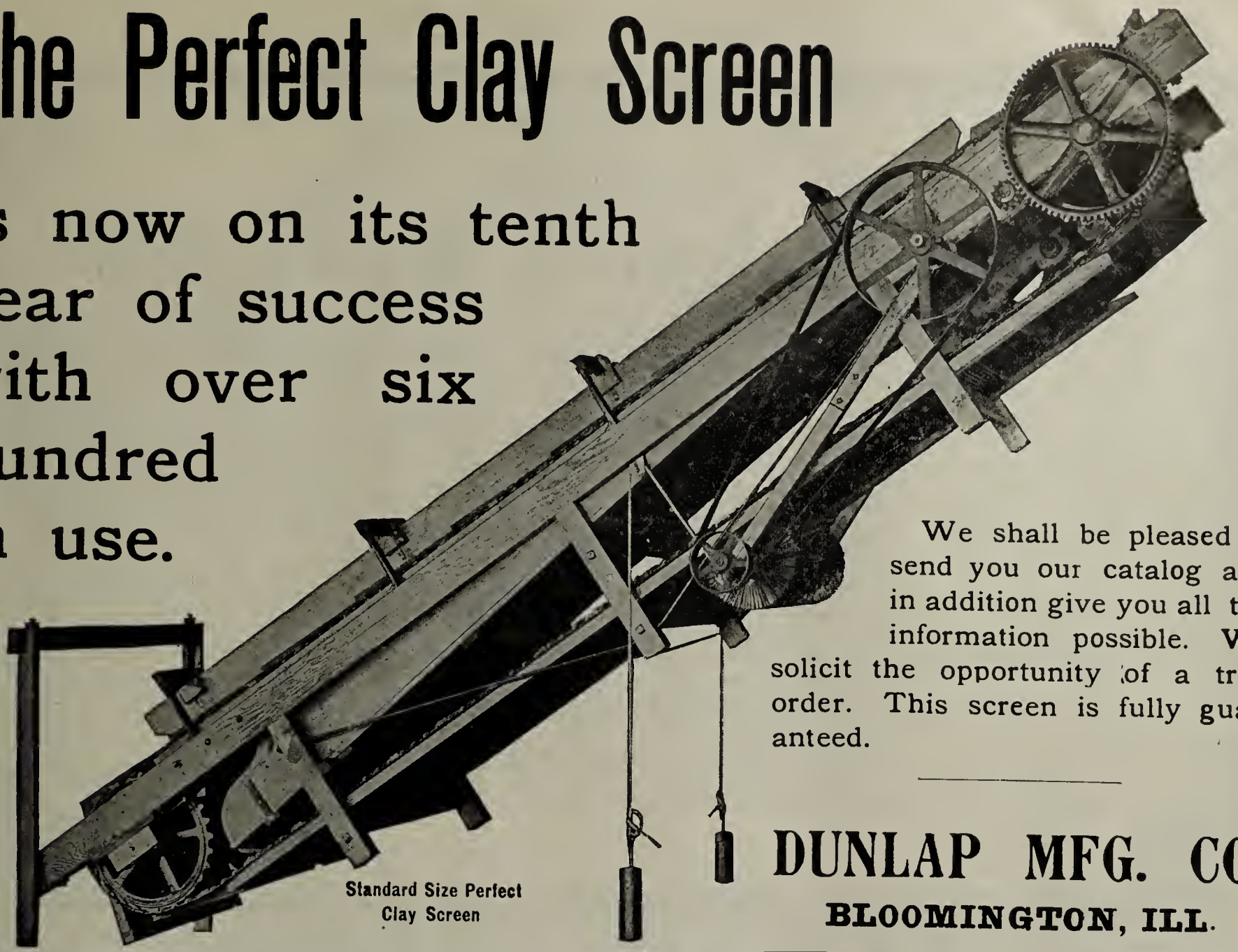

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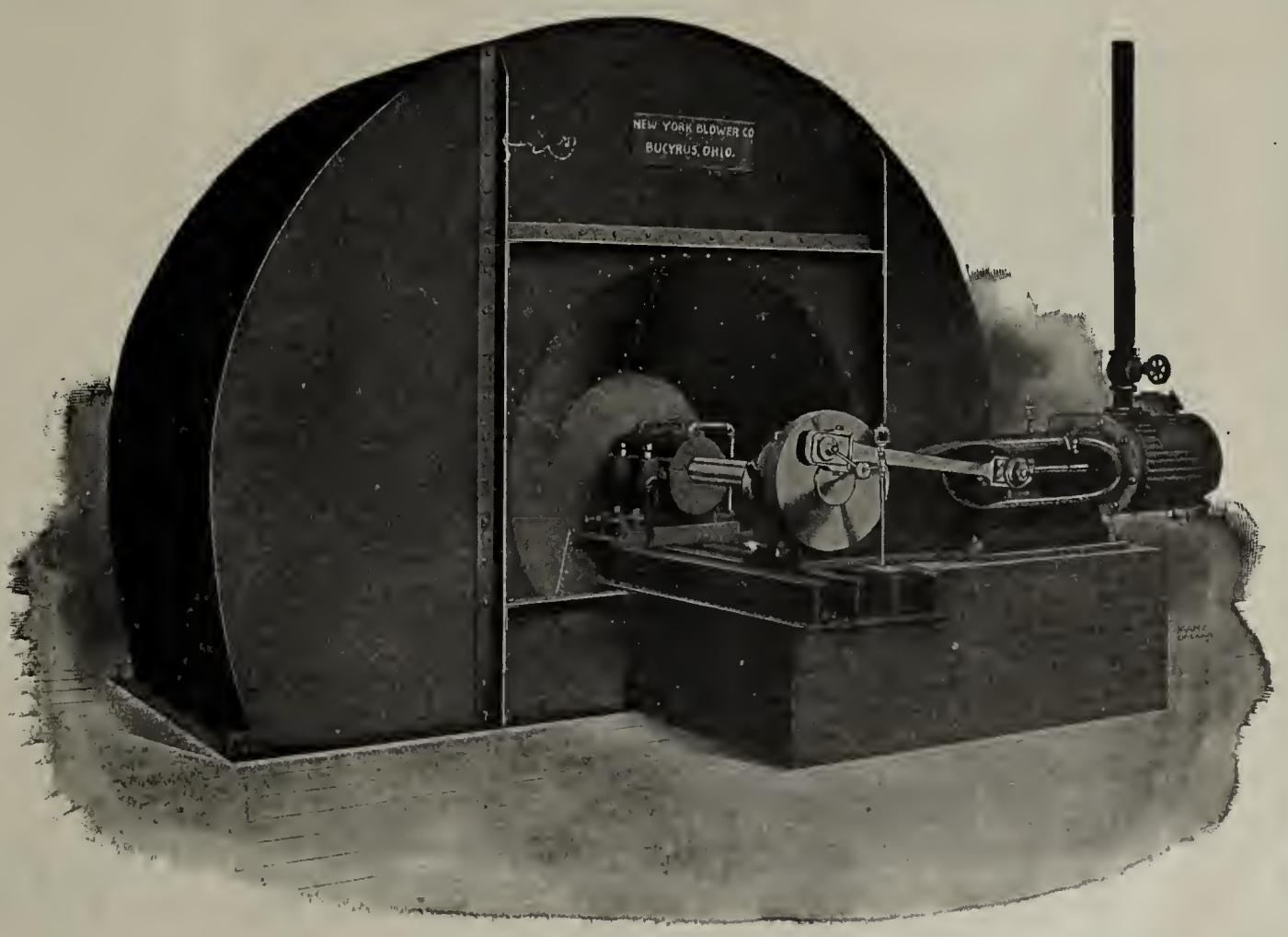

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A Wasteless Dryer--A Rodger's Dryer

Dry your Brick with a Rodger's Dryer and you'll

WASTE NO TIME
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WASTE NO BRICK

AN ABSOLUTELY WASTELESS DRYER
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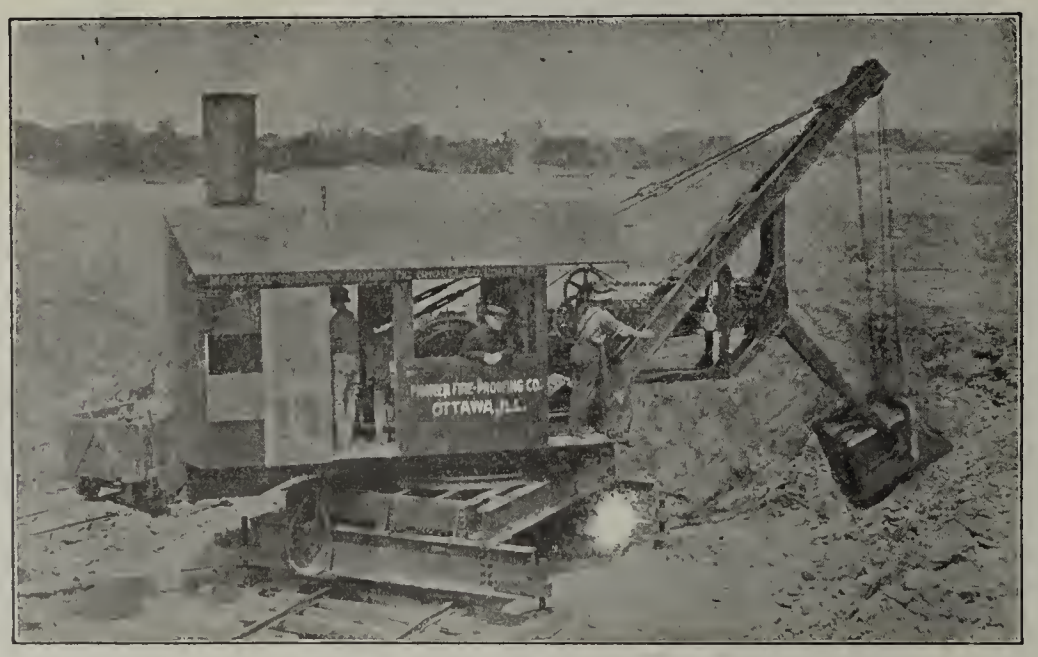
Made In Four Sizes. Mounted on Car Wheels or Traction Wheels.



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Wire Cables used instead of Chains.
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Operated by one man for outputs up to 125,000 brick per day.

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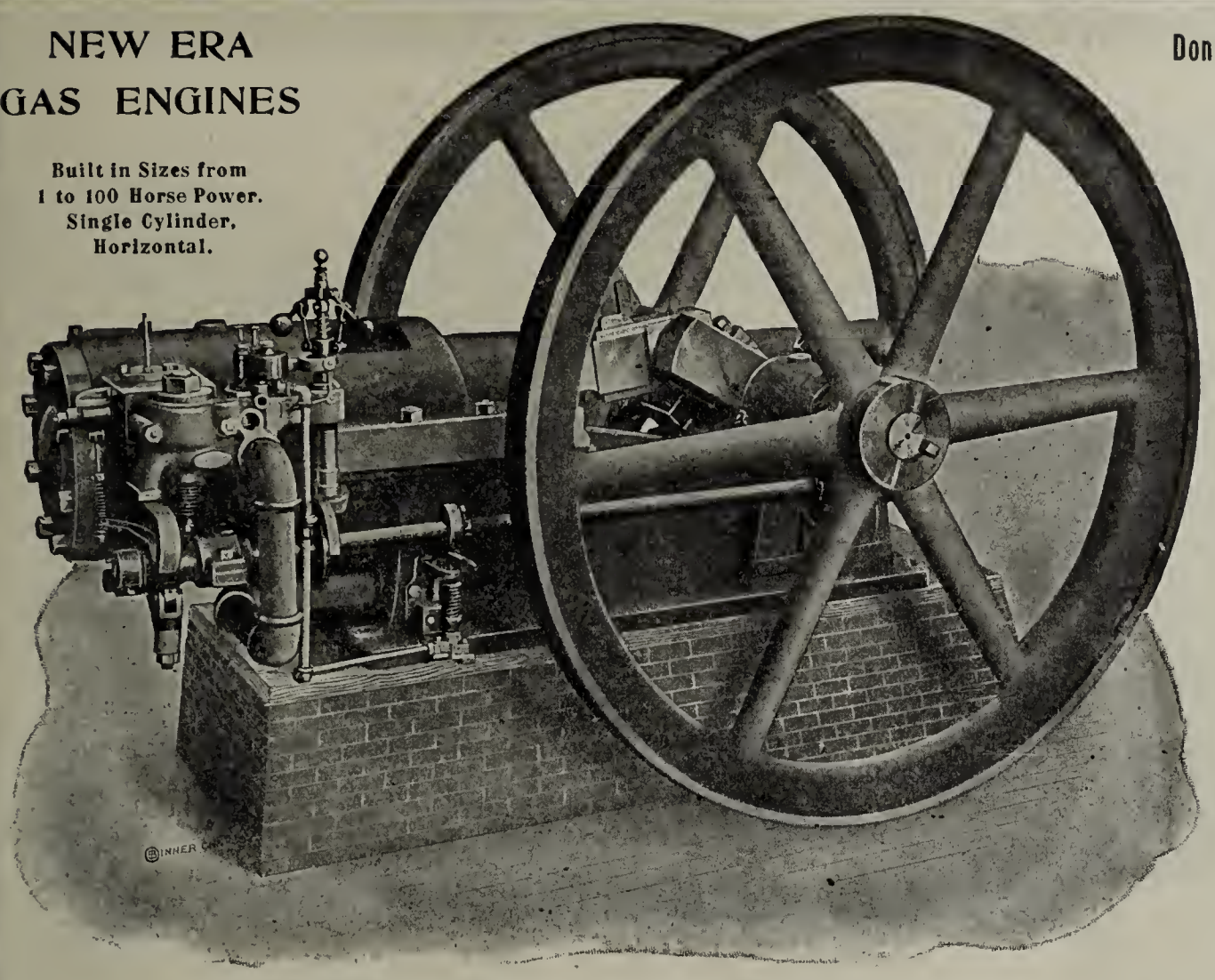
Built in Sizes from 1 to 100 Horse Power. Single Cylinder, Horizontal.



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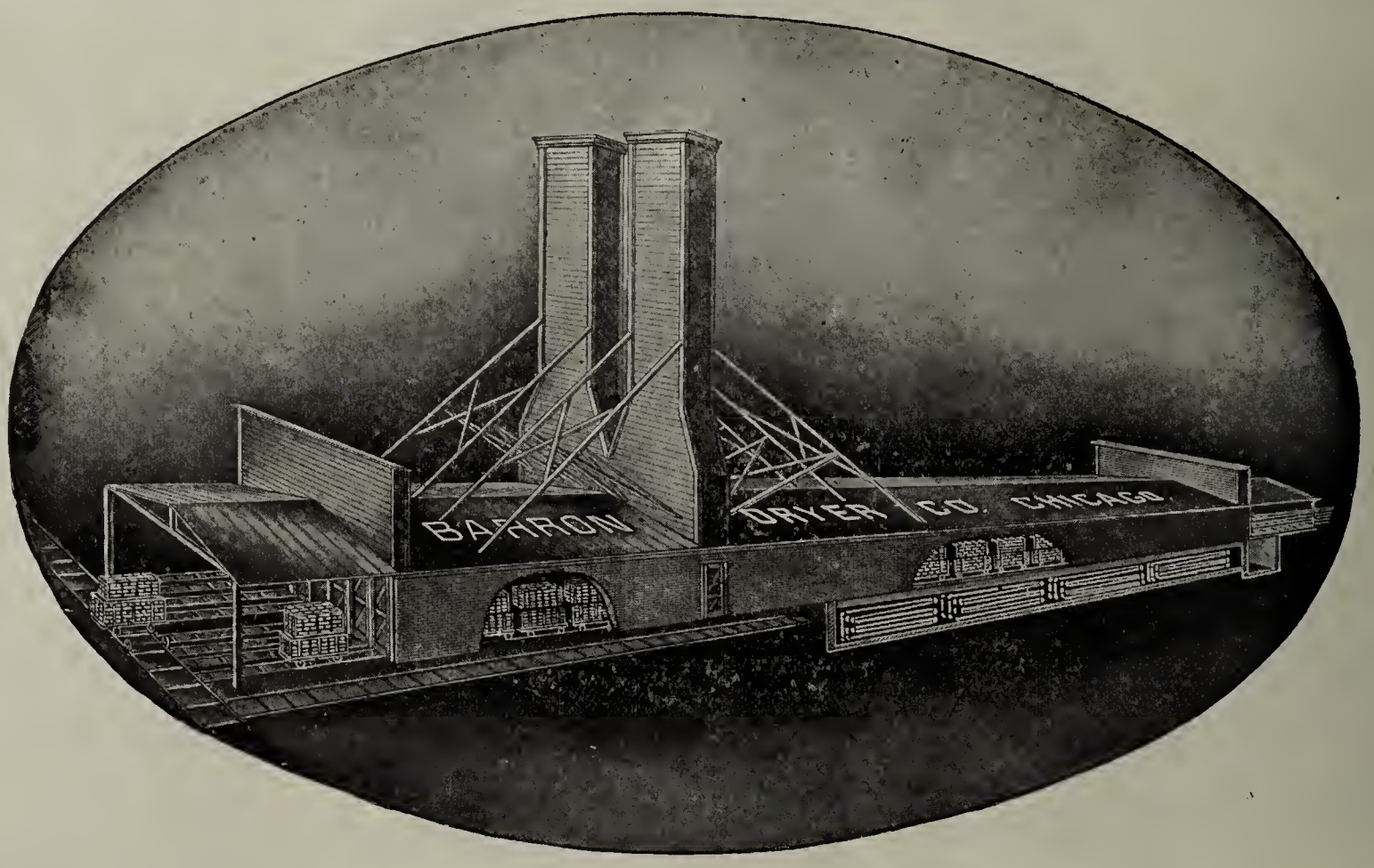

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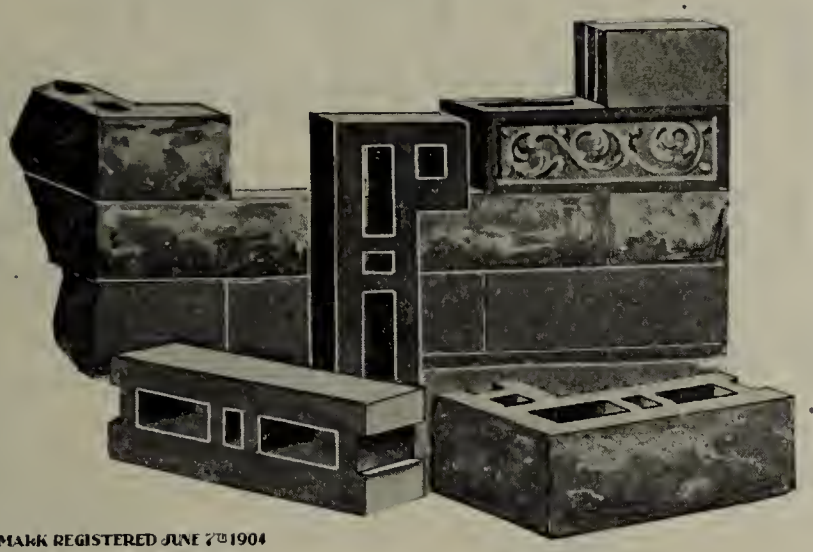

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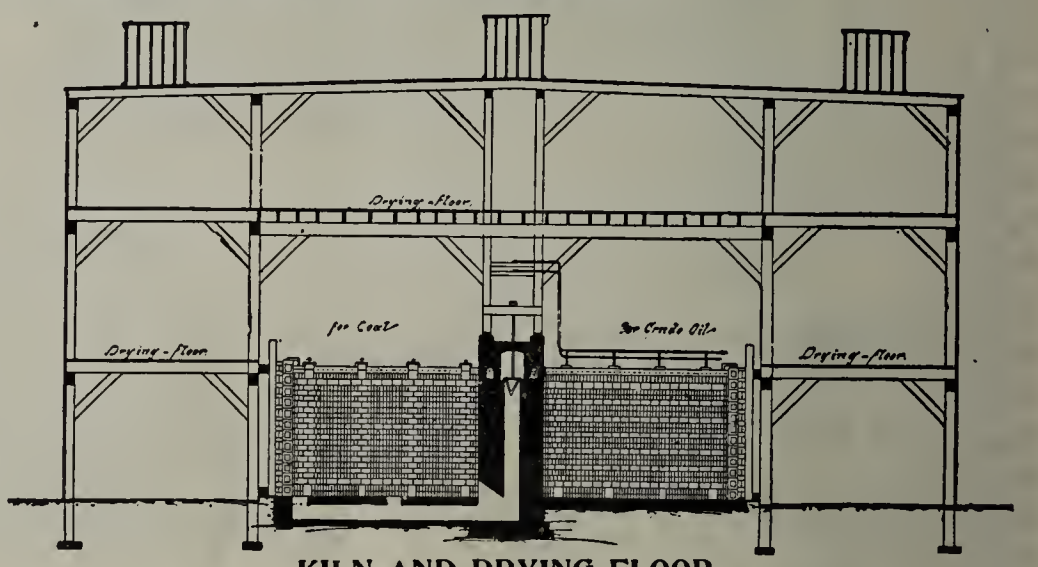

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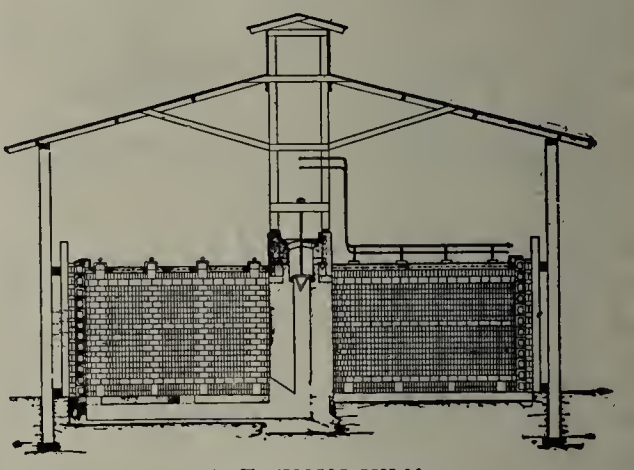

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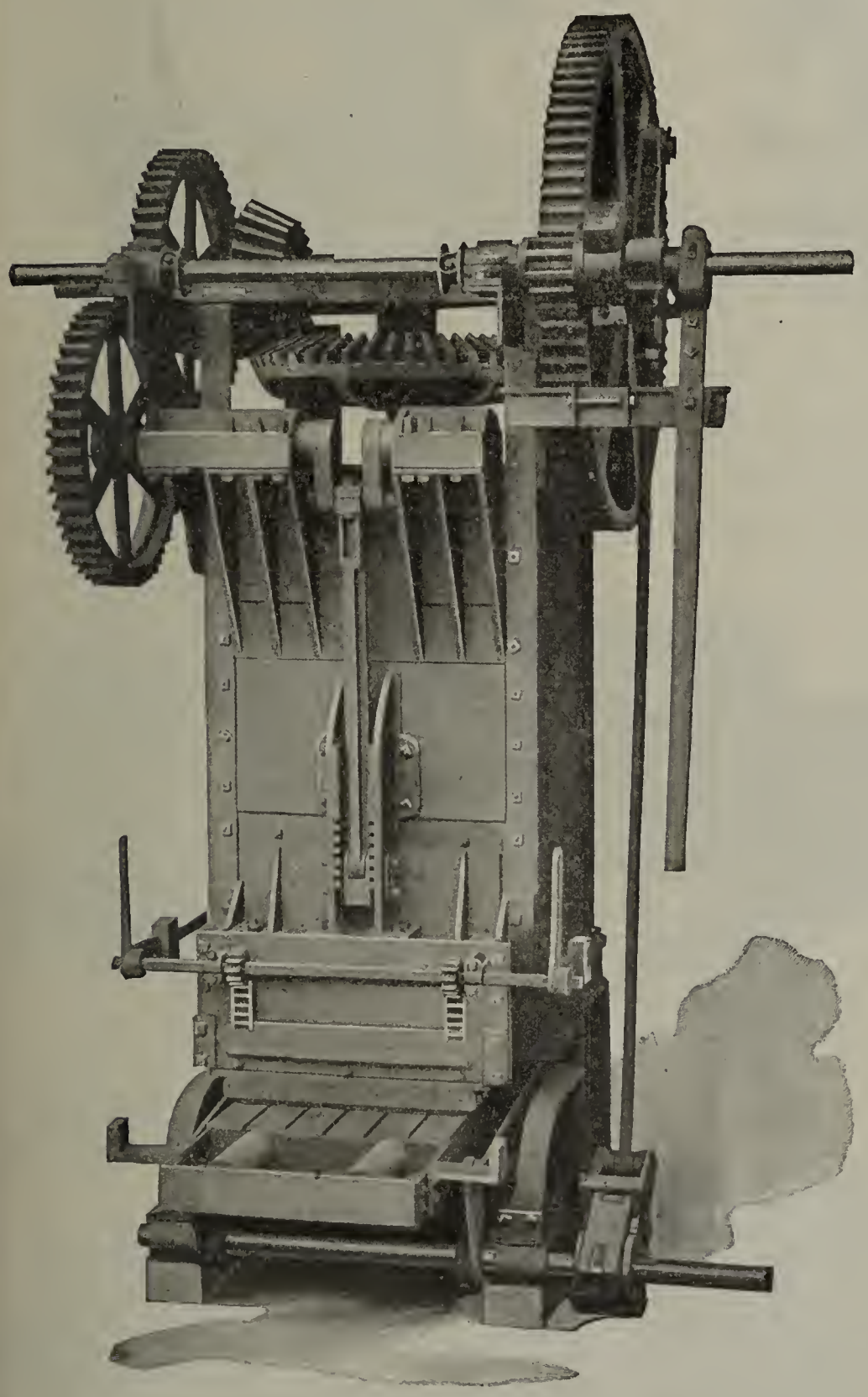

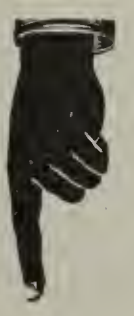

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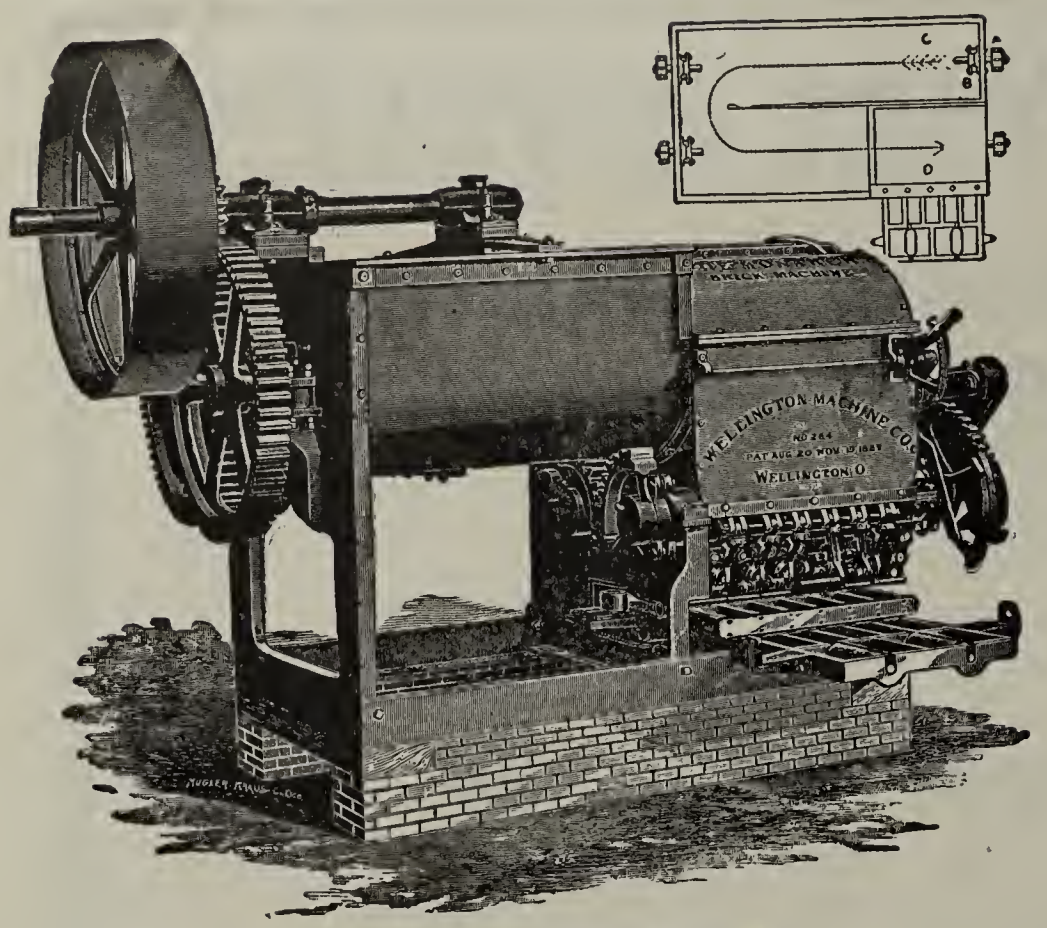

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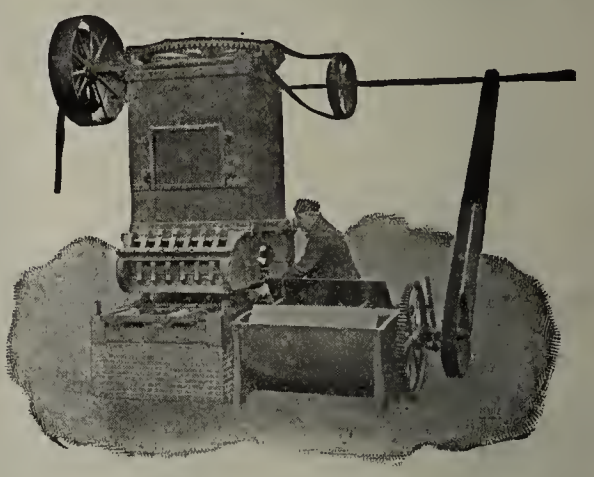

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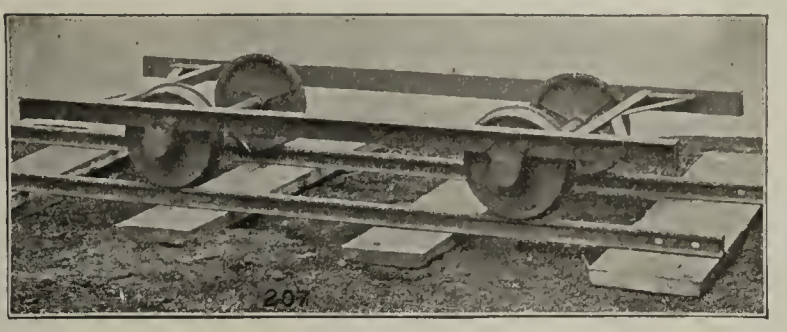

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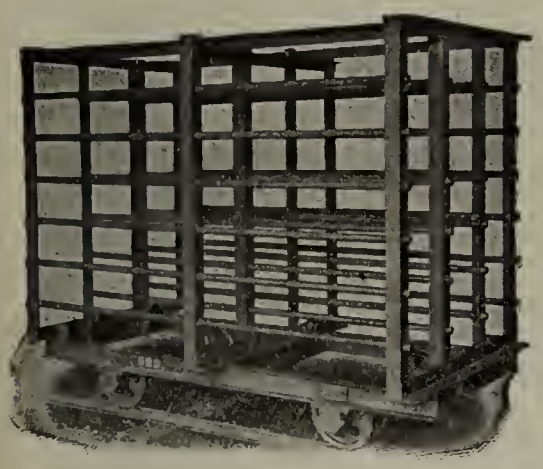

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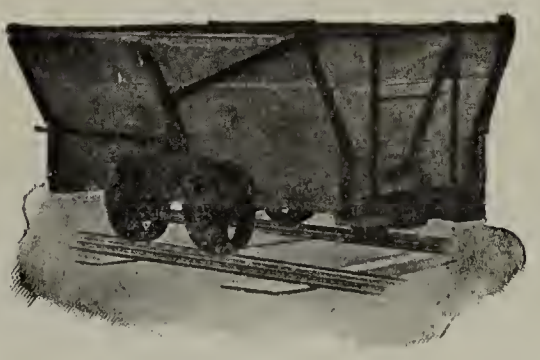

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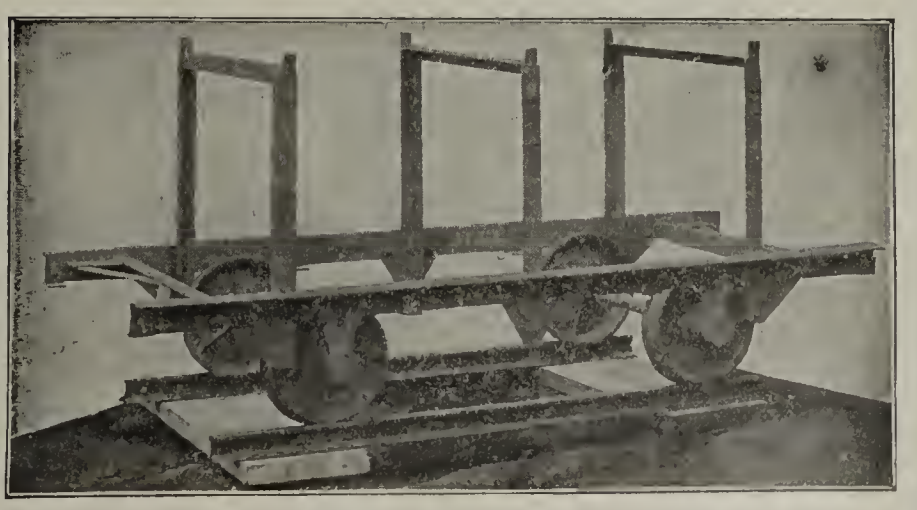

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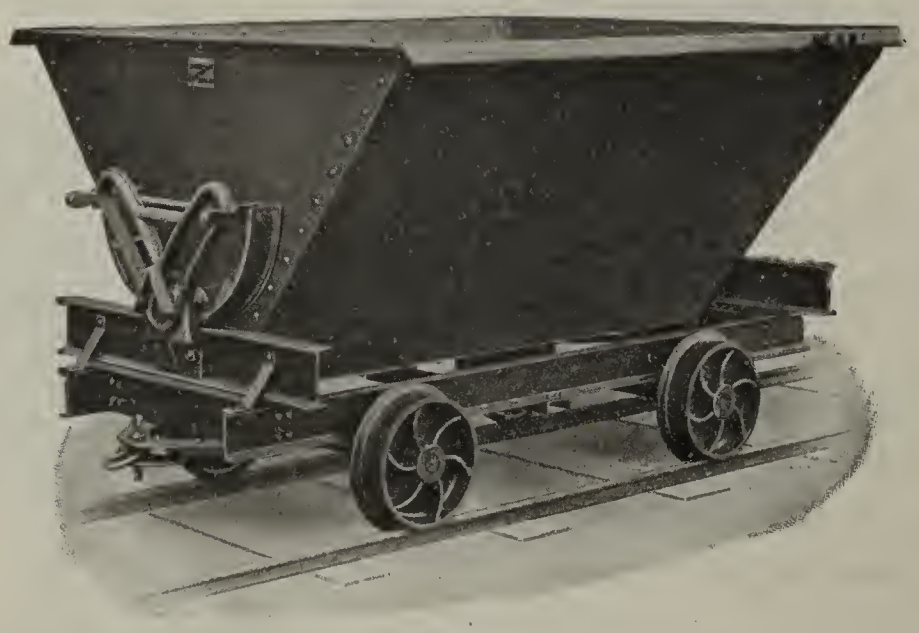

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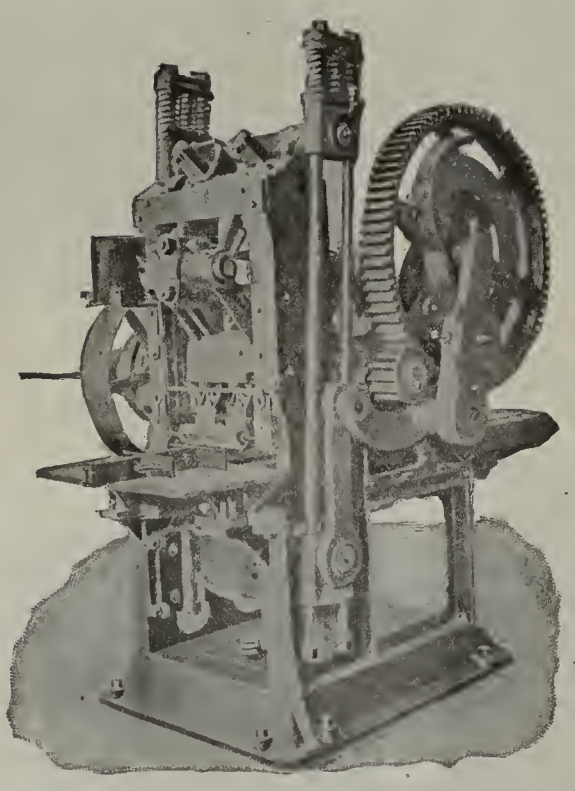

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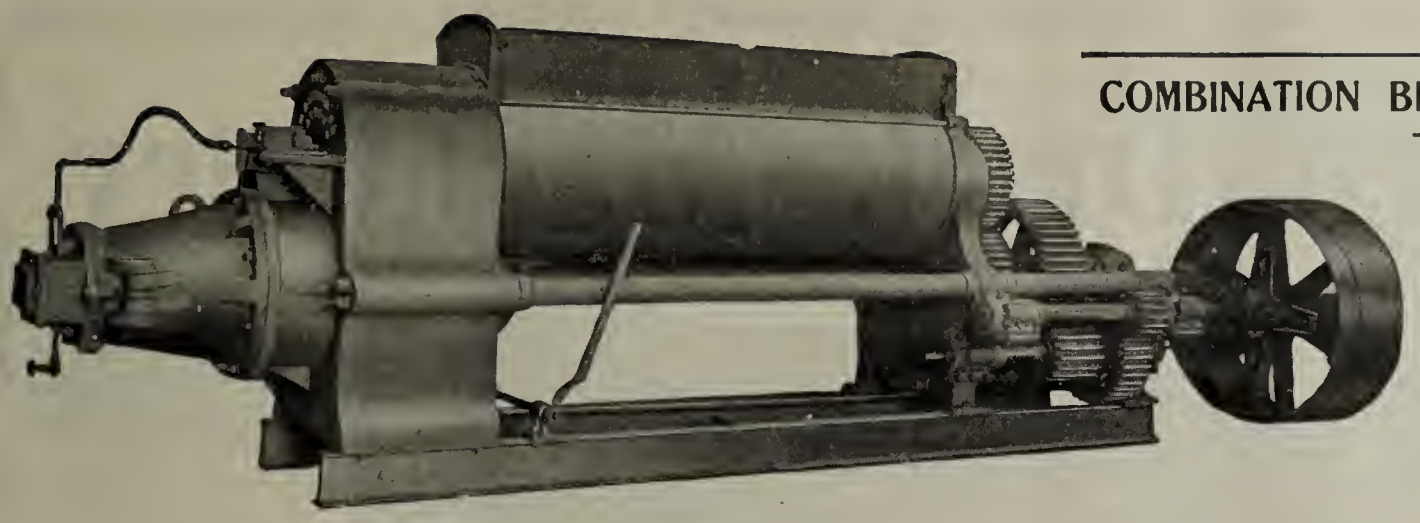

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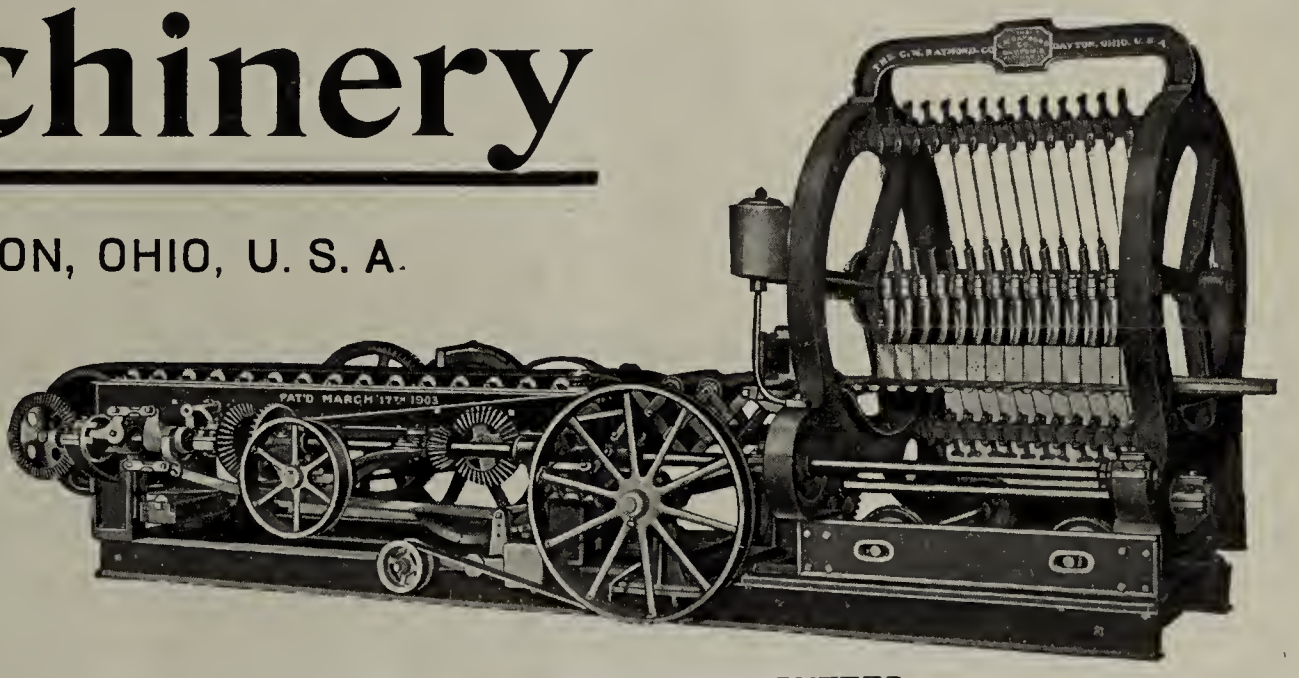

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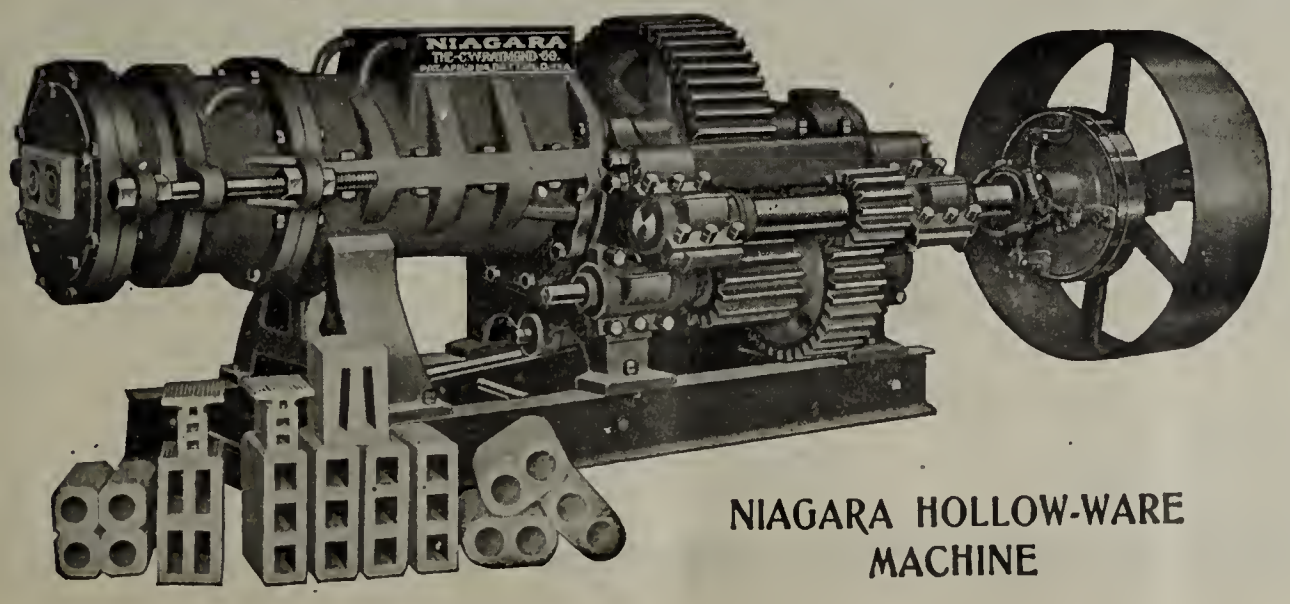

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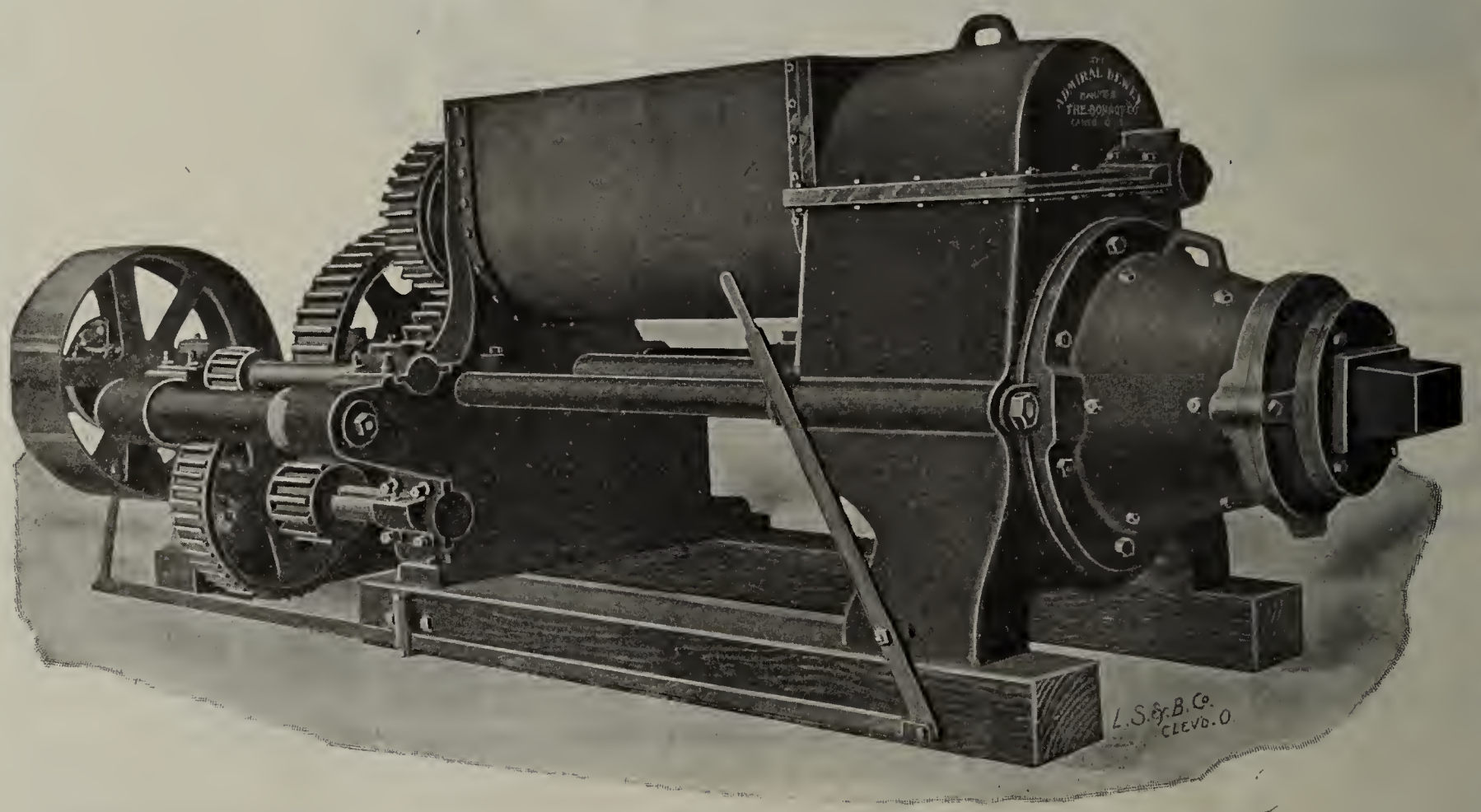

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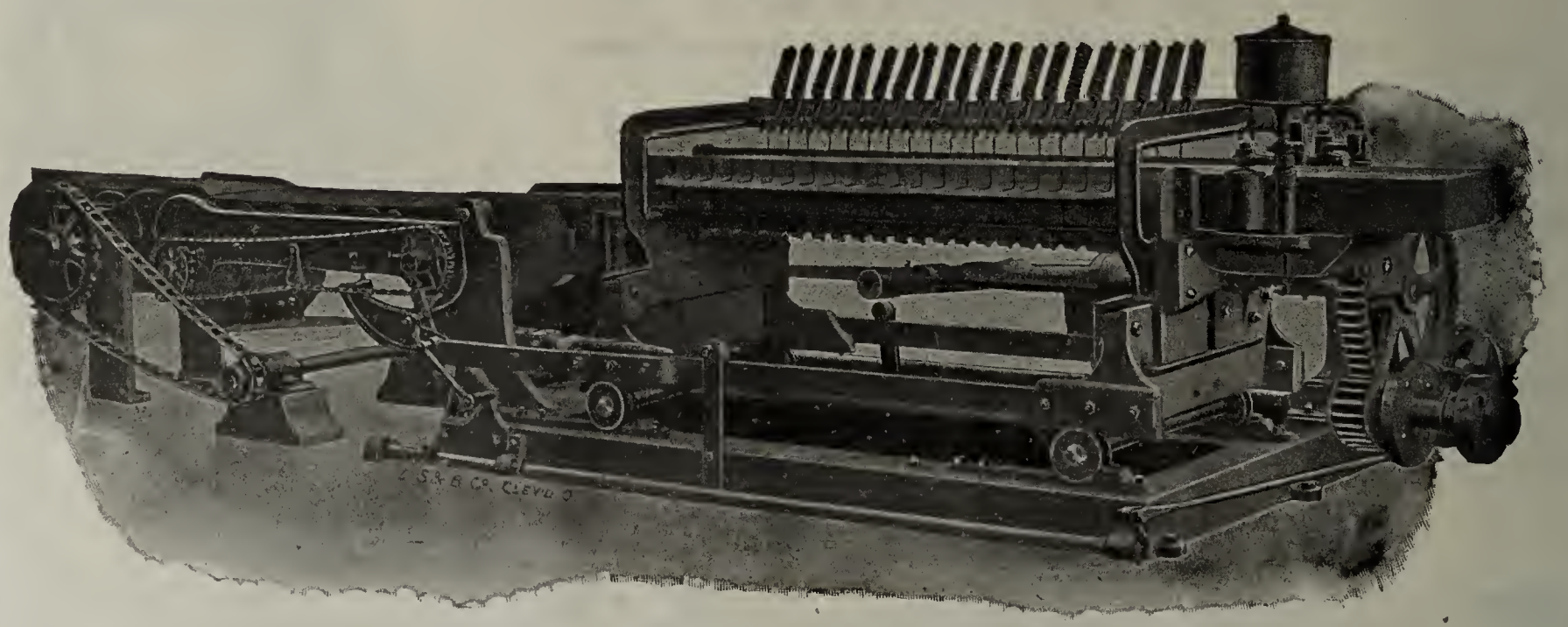

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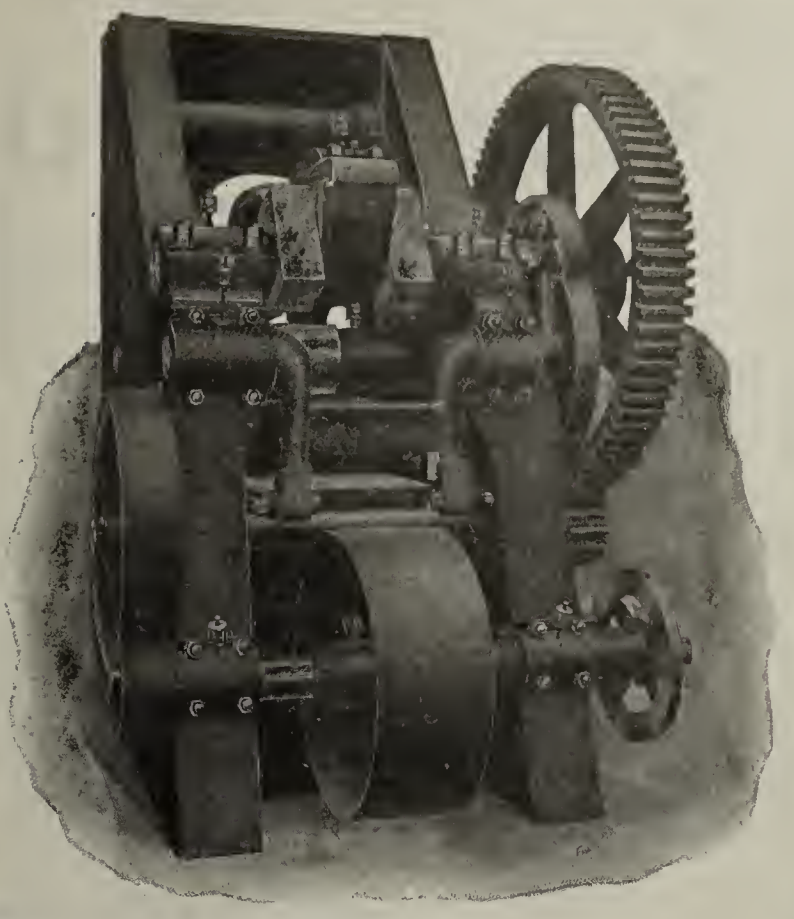

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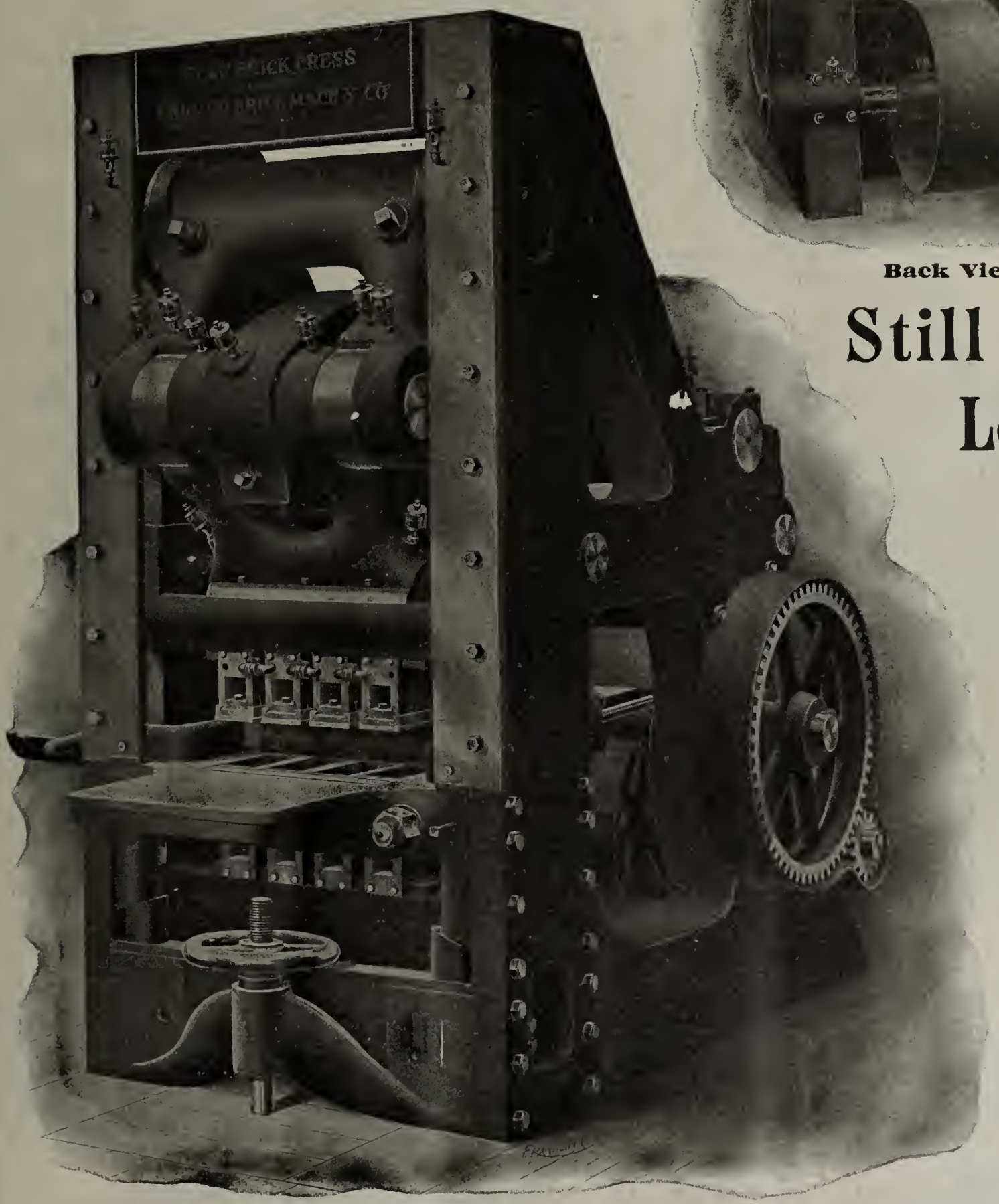

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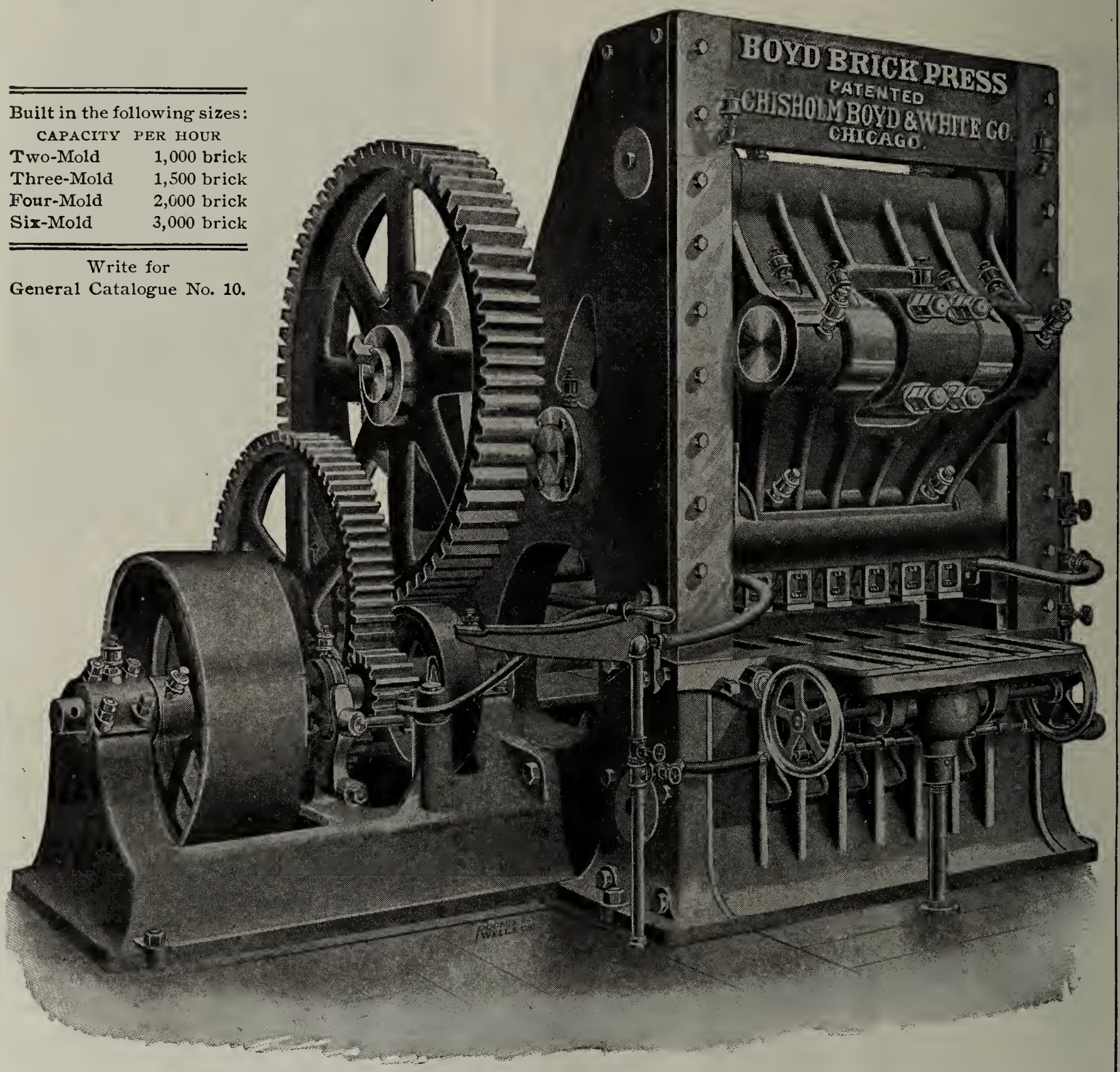

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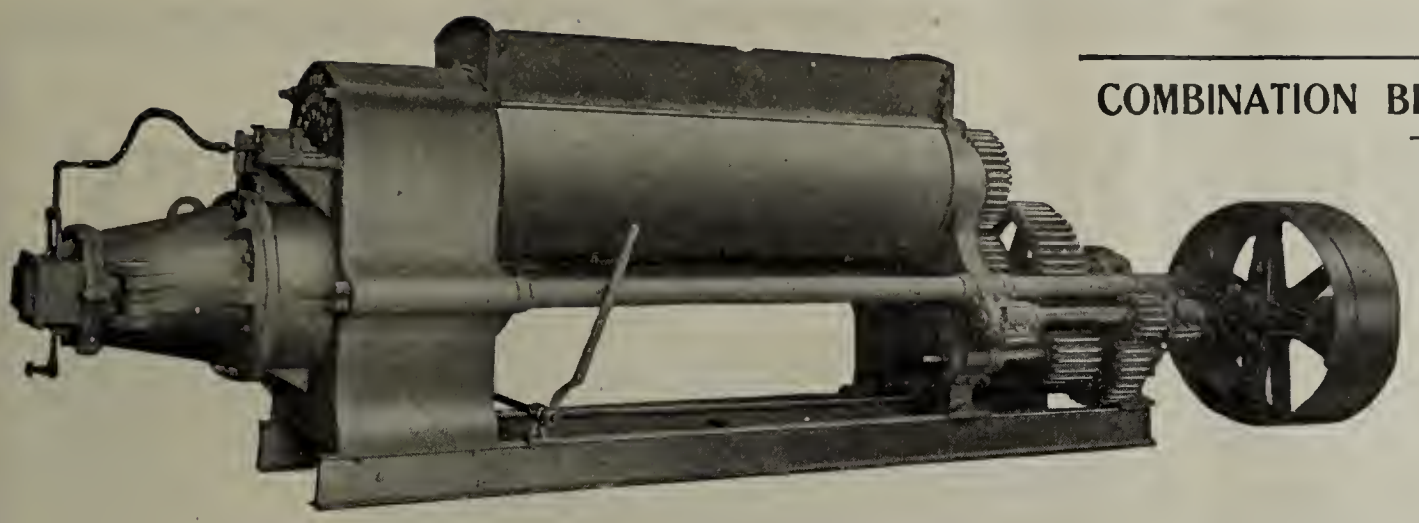

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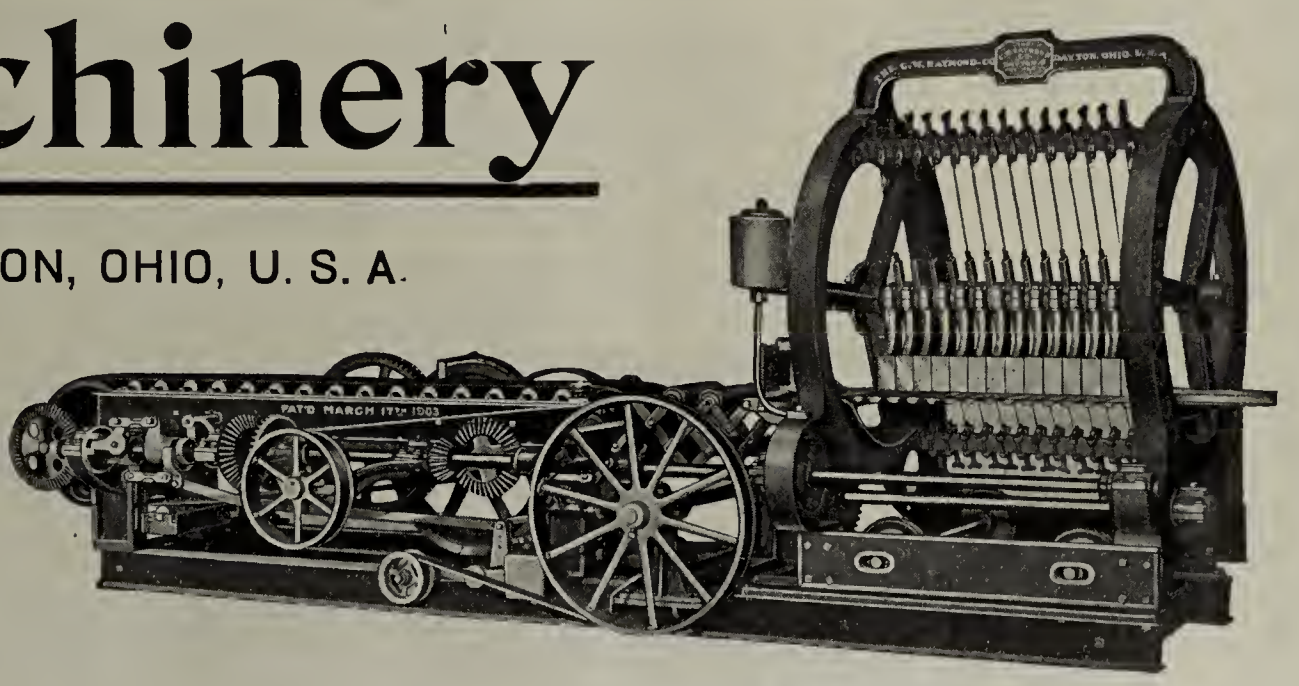

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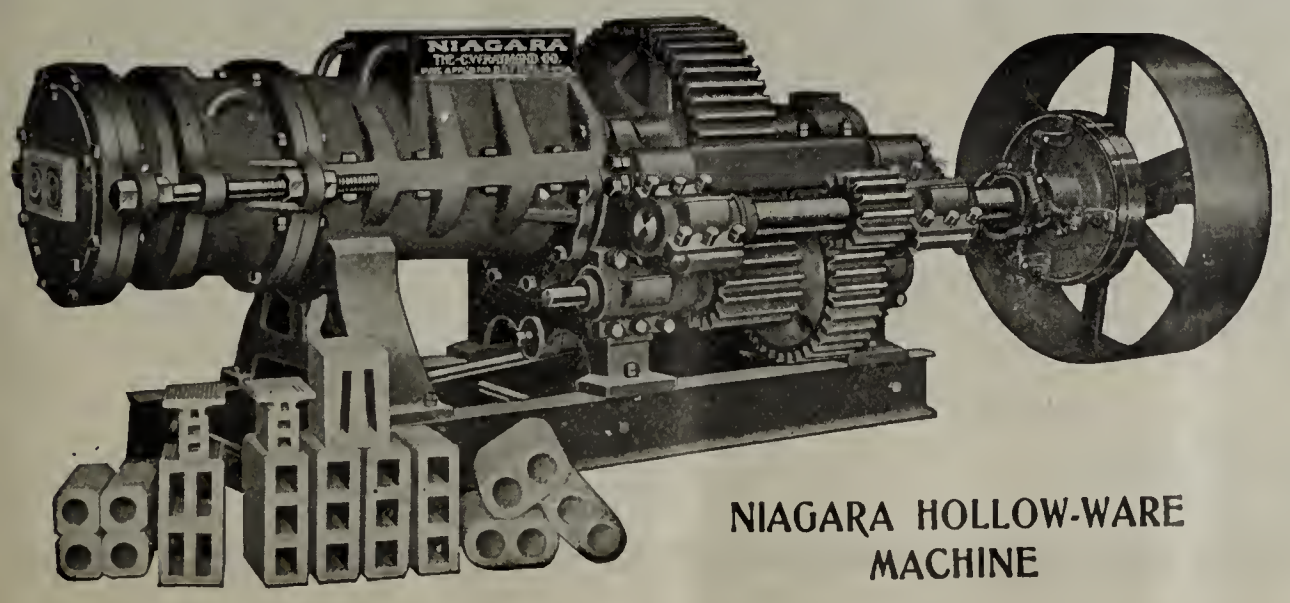

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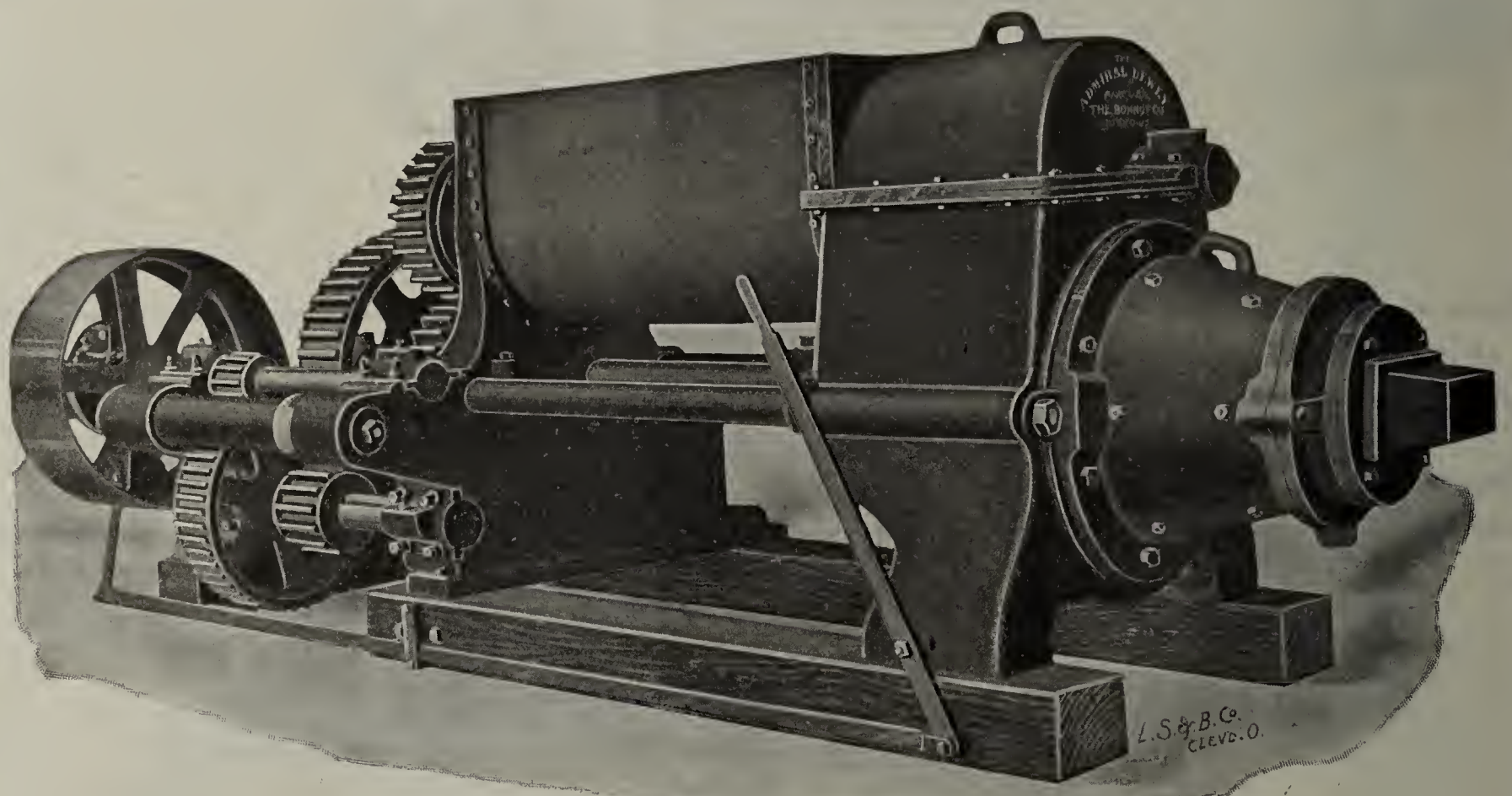

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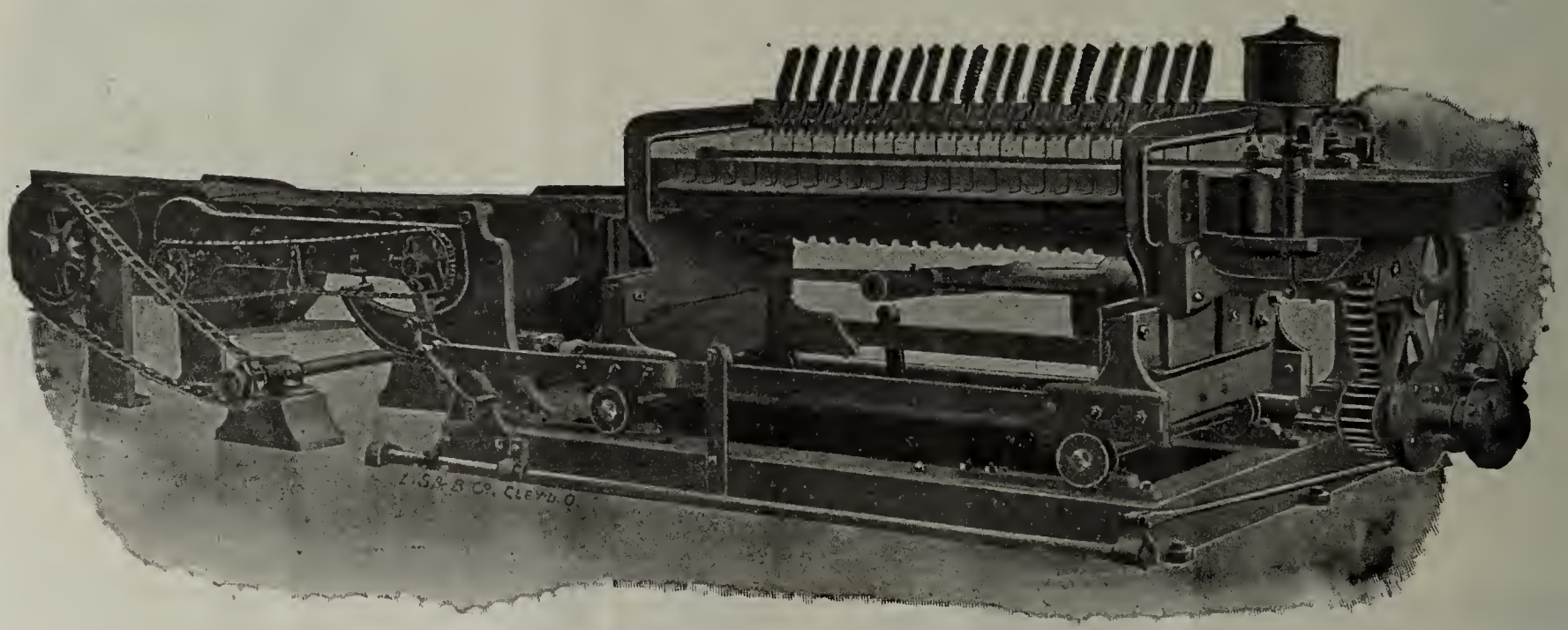

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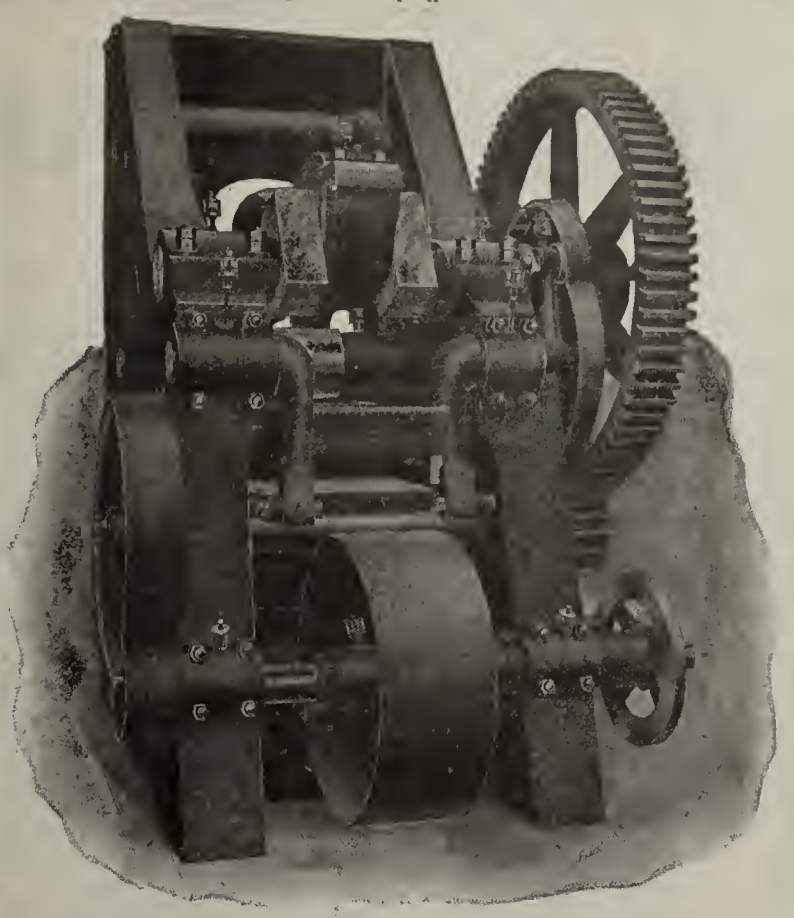

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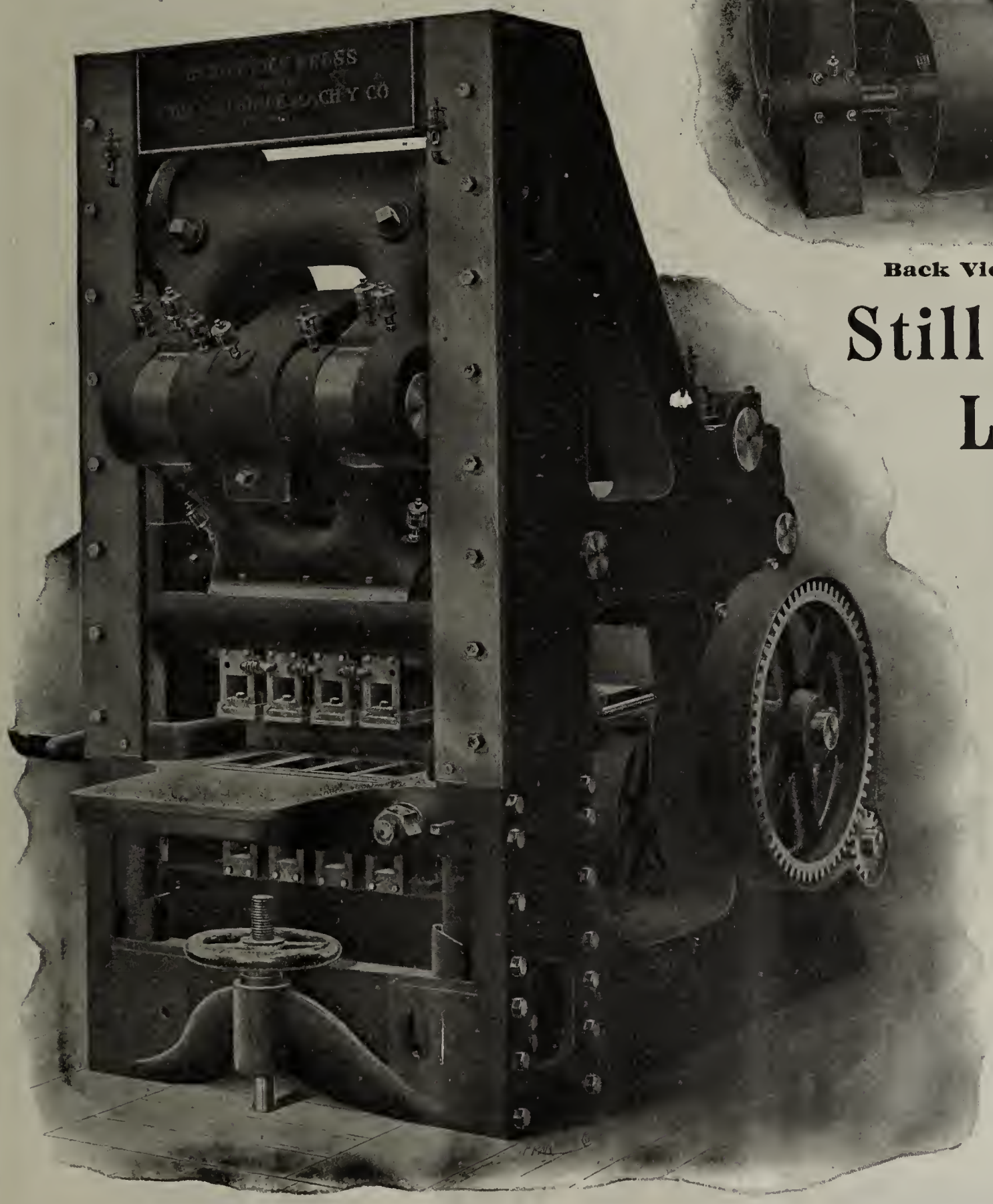

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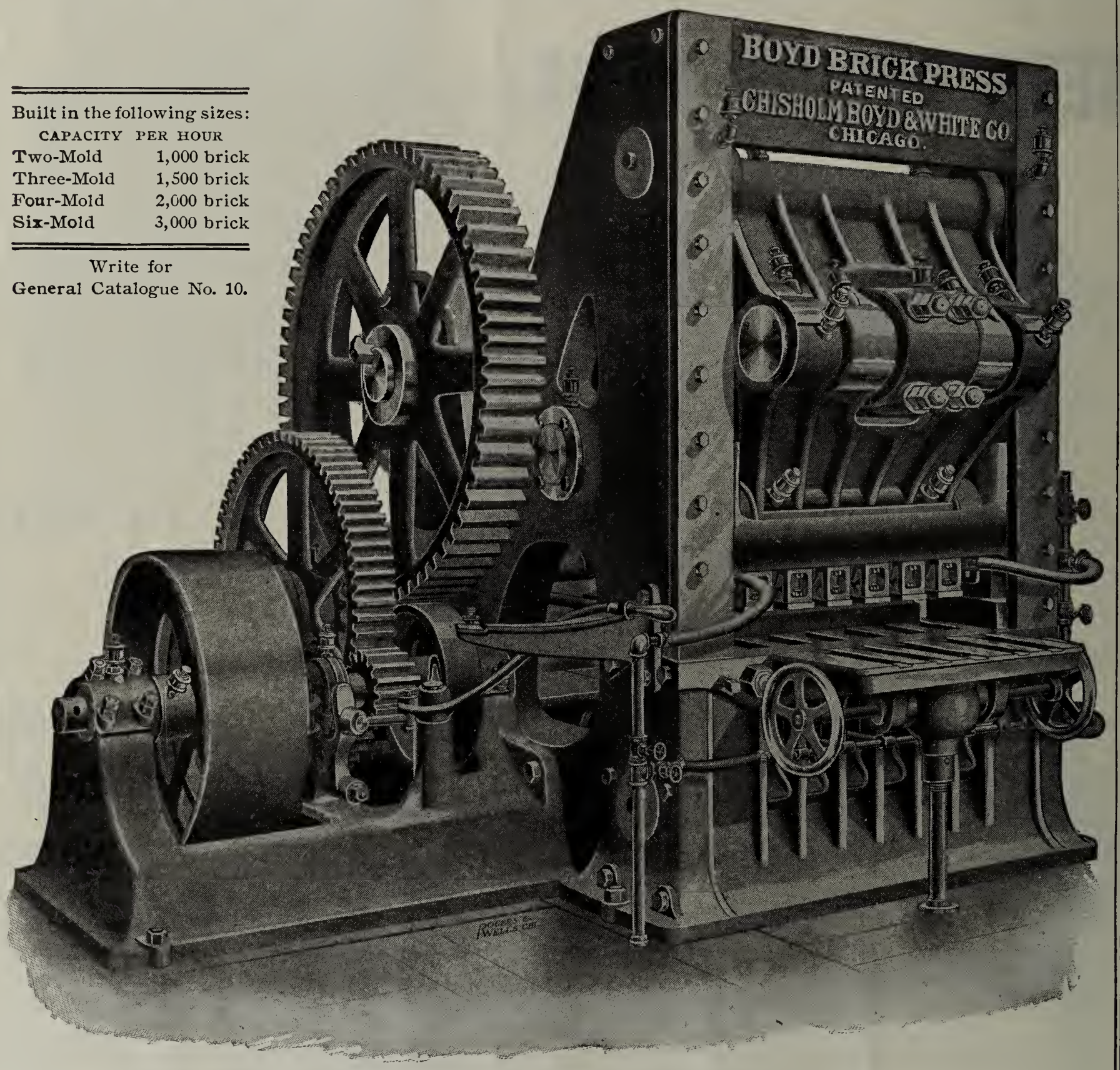

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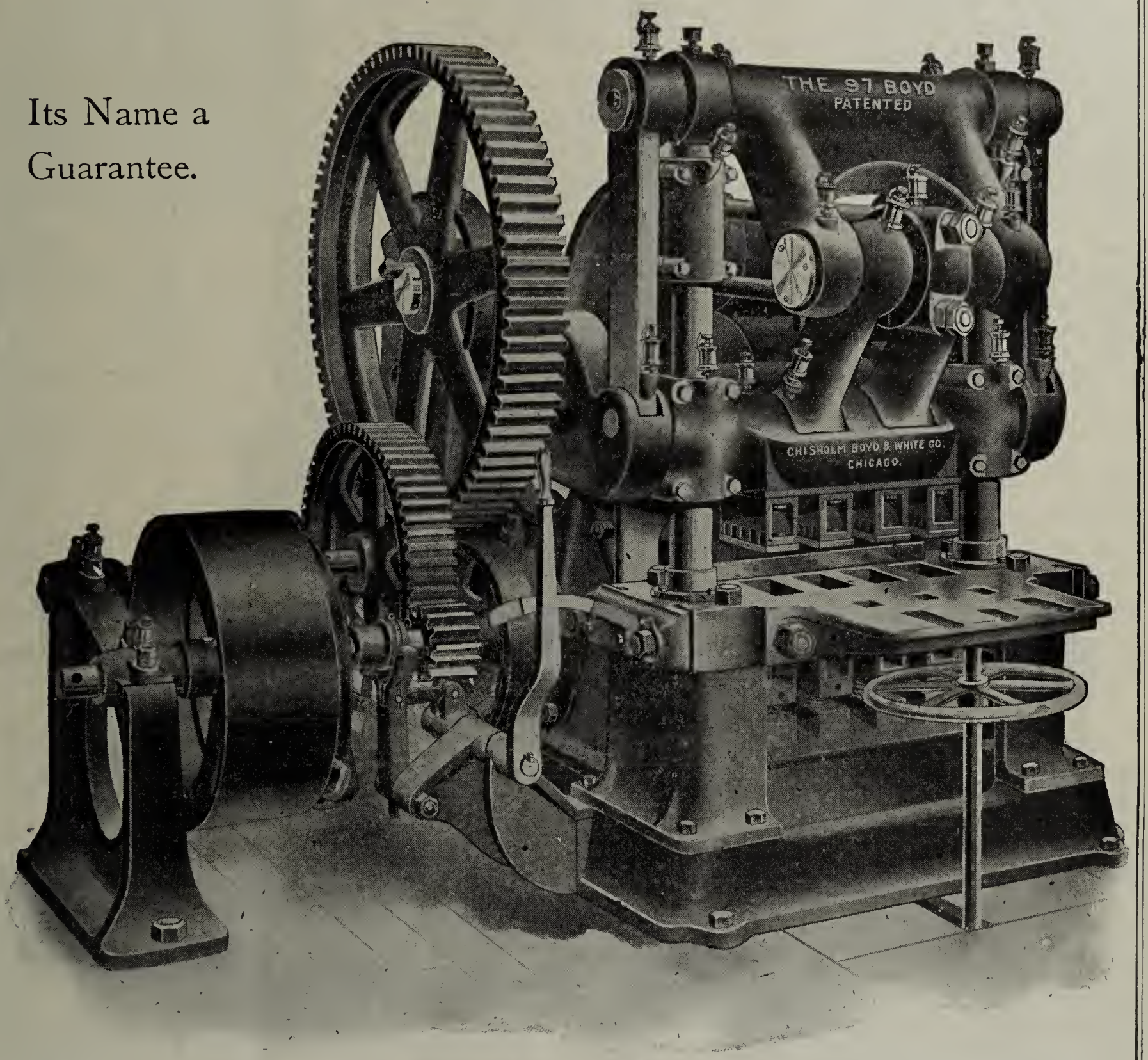
Chisholm, Boyd & White Company

Office and Works, 57th and Wallace Sts. **CHICAGO, ILL.**

The Boyd Brick Press

The '97 Model

Its Name a Guarantee.



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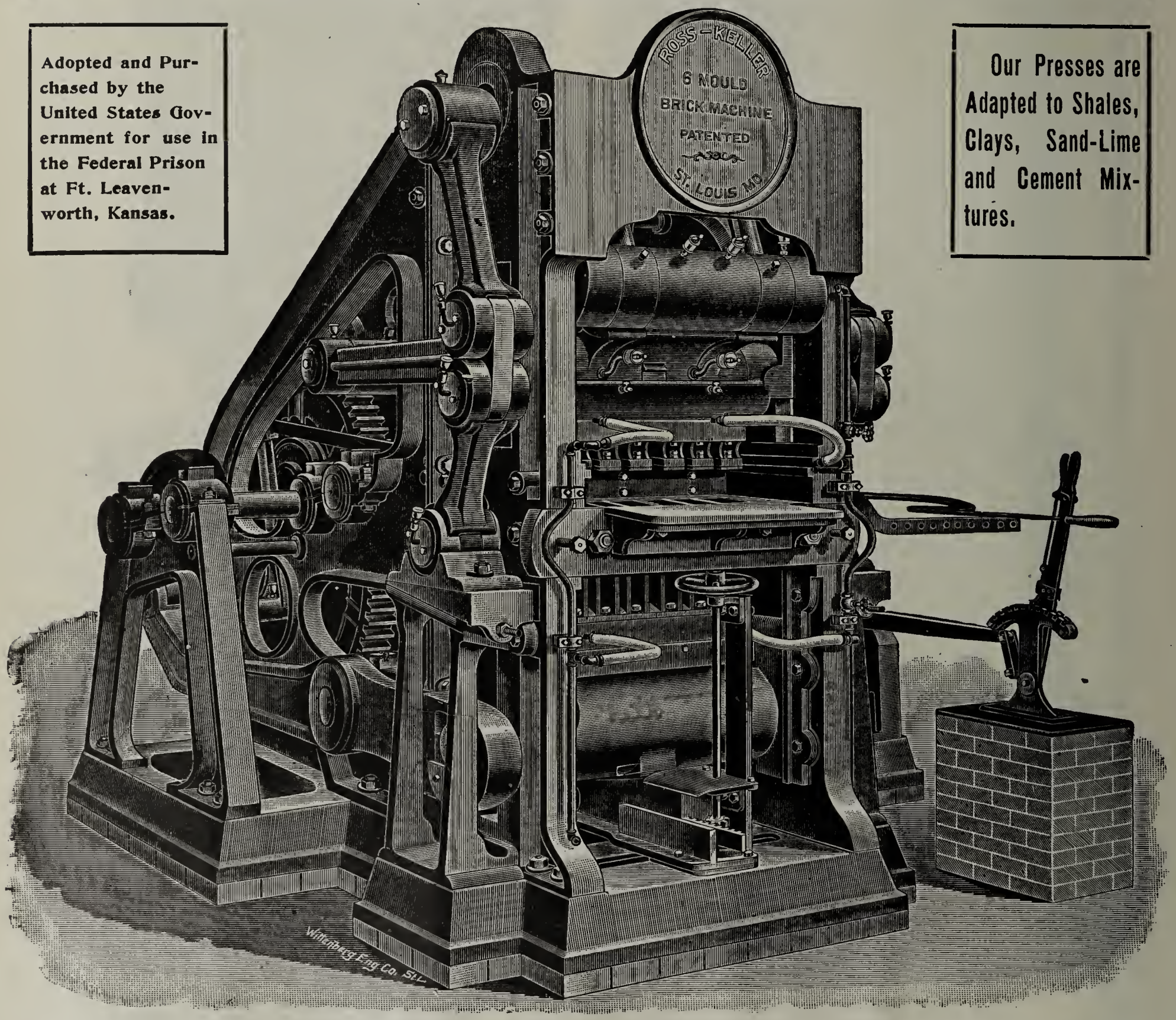

Our Presses are Adapted to Shales, Clays, Sand-Lime and Cement Mixtures.

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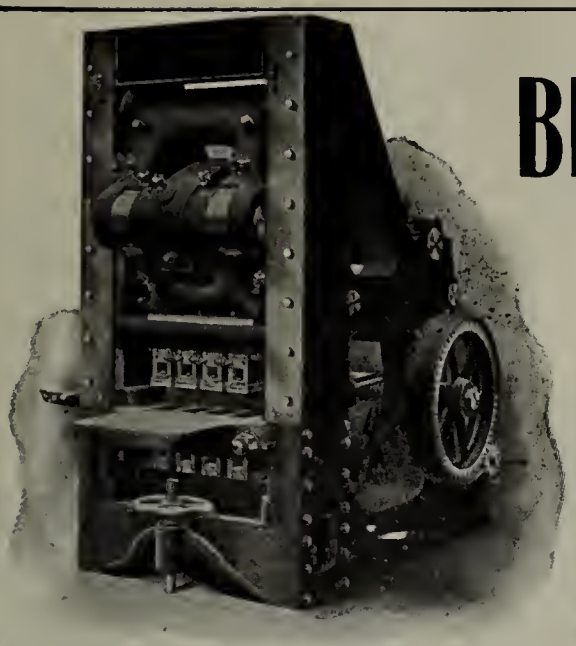
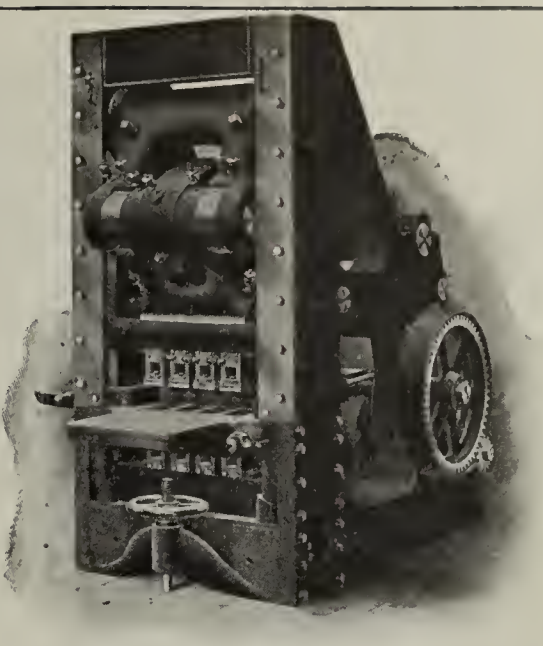
for Pacific Coast, Portland, Ore.

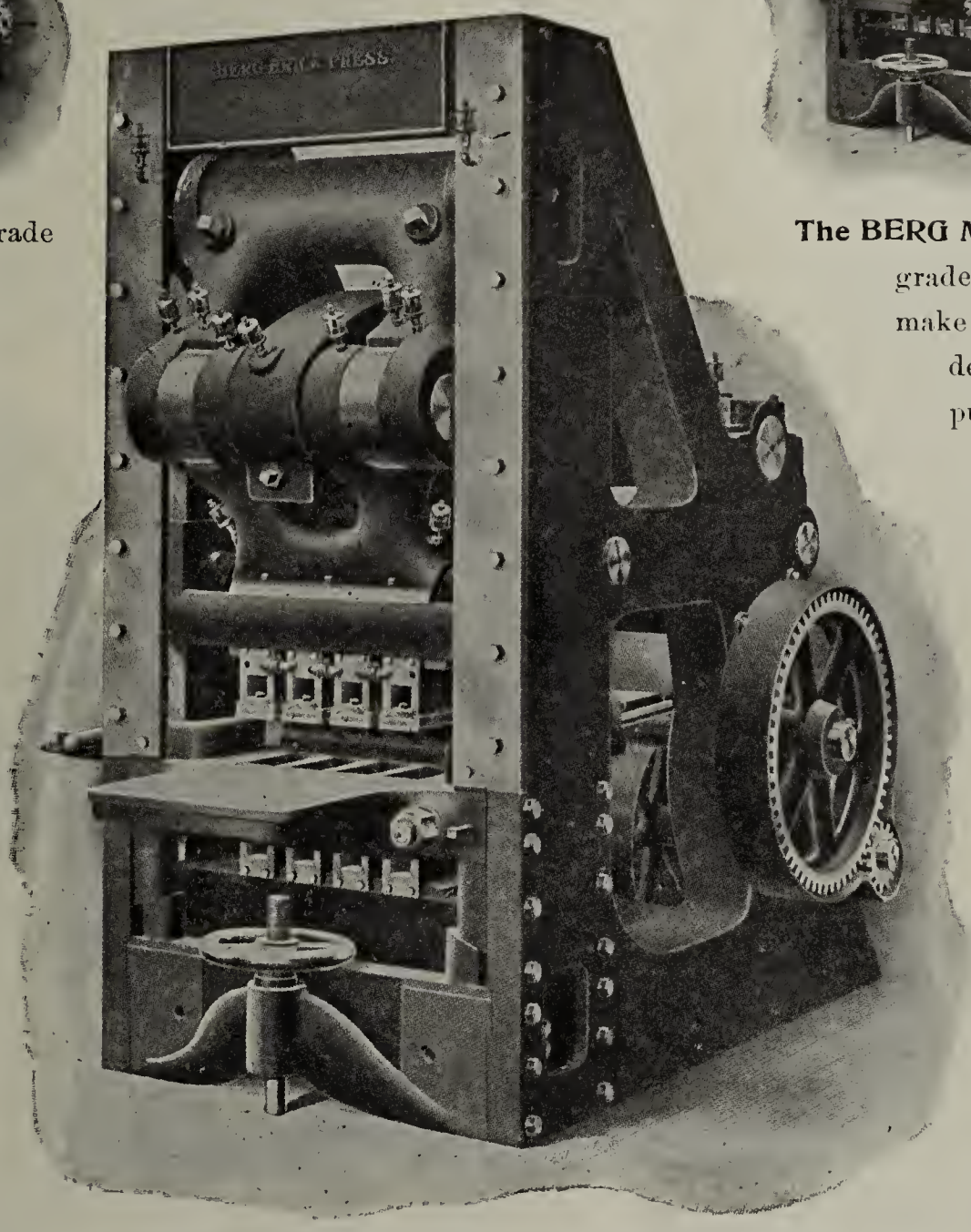
FULLERTON BUILDING, ST. LOUIS, MO., U. S. A.

BERG BRICK PRESS

The highest development of the Art of Brickmaking Machinery so pronounced by the United States Government.







The BERG for the highest grade of pressed brick of shale or clay. It makes all kinds of shapes and sizes of brick. Changes from one shape to another can be made in less than an hour's time.

The BERG MAKES the highest grade of fire brick. Can make all kinds of shapes desired for fire-brick purposes.

First-Class Workmanship. Cut Gearing. Fully Warranted.

Three distinct pressures, make the brick evenly pressed all through. No granulated centers of the brick.

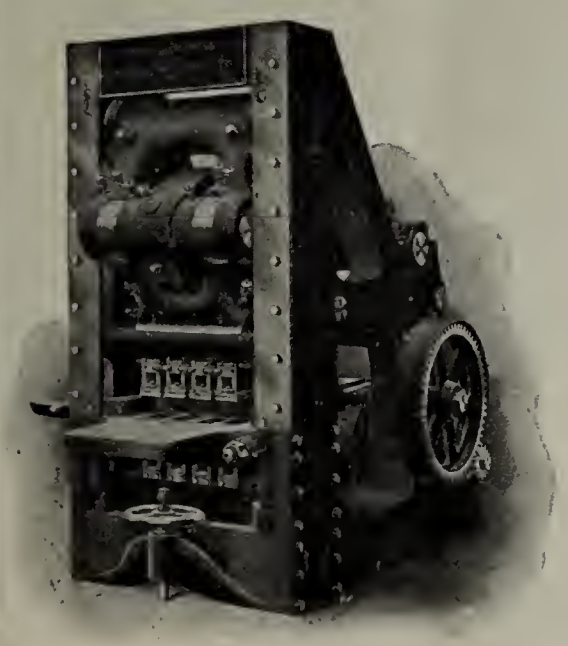
The BERG makes the best sand-lime brick and cheapest because it is the strongest machine and gives the highest pressure. Thirty-five sand-lime plants in United States use the **BERG** Brick Press SUCCESSFULLY.

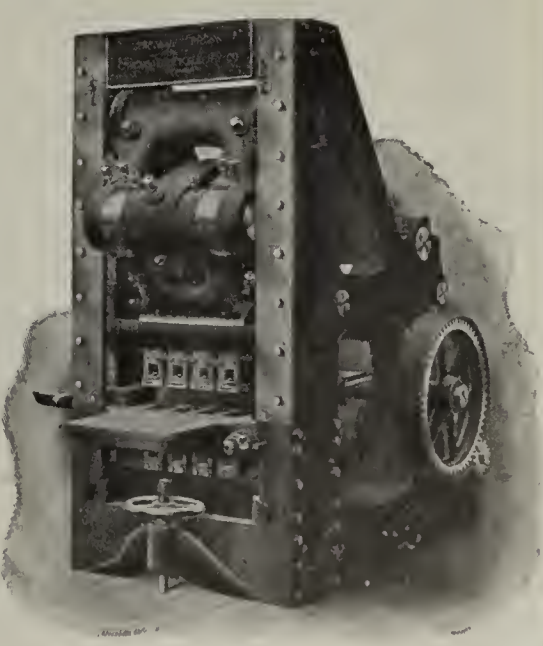
The BERG is the best for sand and cement because of its strong pressure. Uses less cement, makes cheaper brick.

The 1905 Berg Press

Many other steps further forward in improvement and highest grade of material and workmanship, also cut gearing. Fully guaranteed as to its success. Manufactured by its inventor in Toronto, Canada, at the Bertram Engine Works Co. Plans and specifications on the different kinds of plants furnished, also all equipments.

For prices and full particulars, address

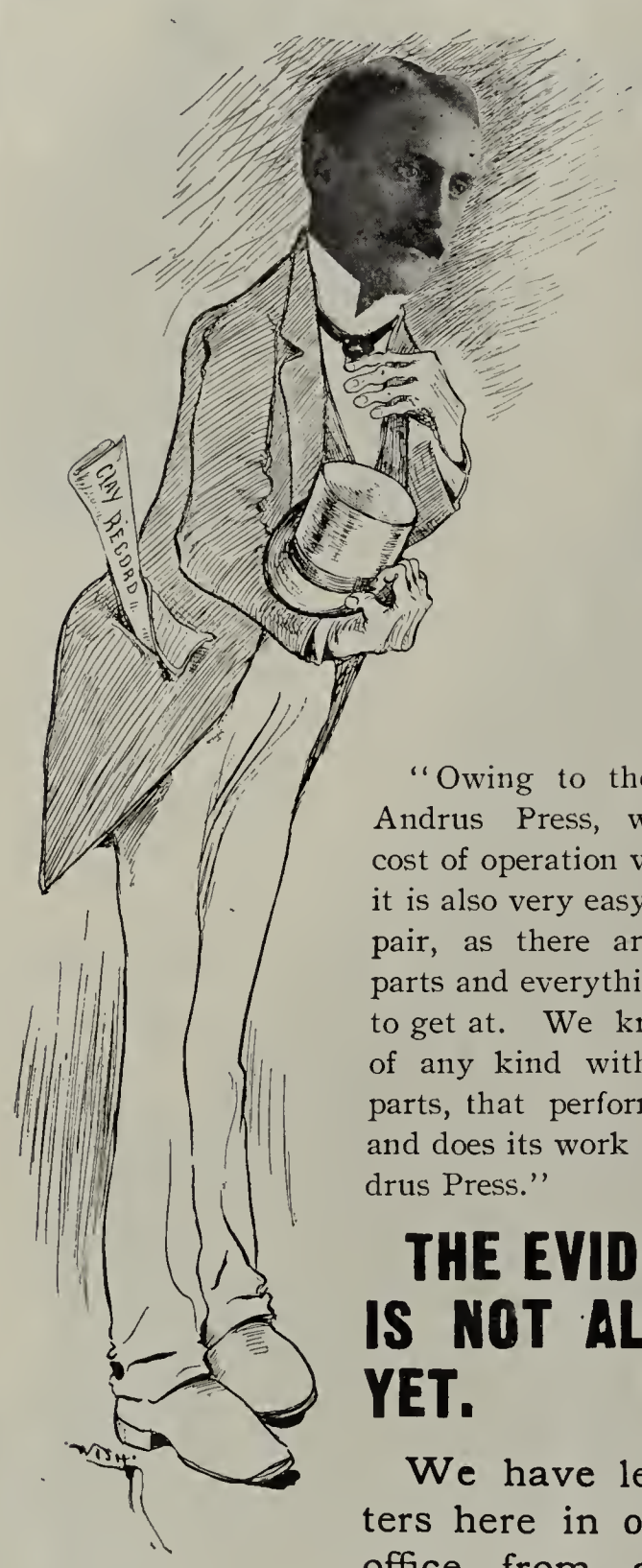




A. BERG

THE BERTRAM ENGINE WORKS

Toronto, Ontario, Canada



Even the Editor

Took Off His Hat

When We Cited the Following Instance:

Anthony Ittner Brick Company, with offices in the Odd Fellows Building, here in our city, have seven Andrus Presses on their yard at Bellville, Ill.

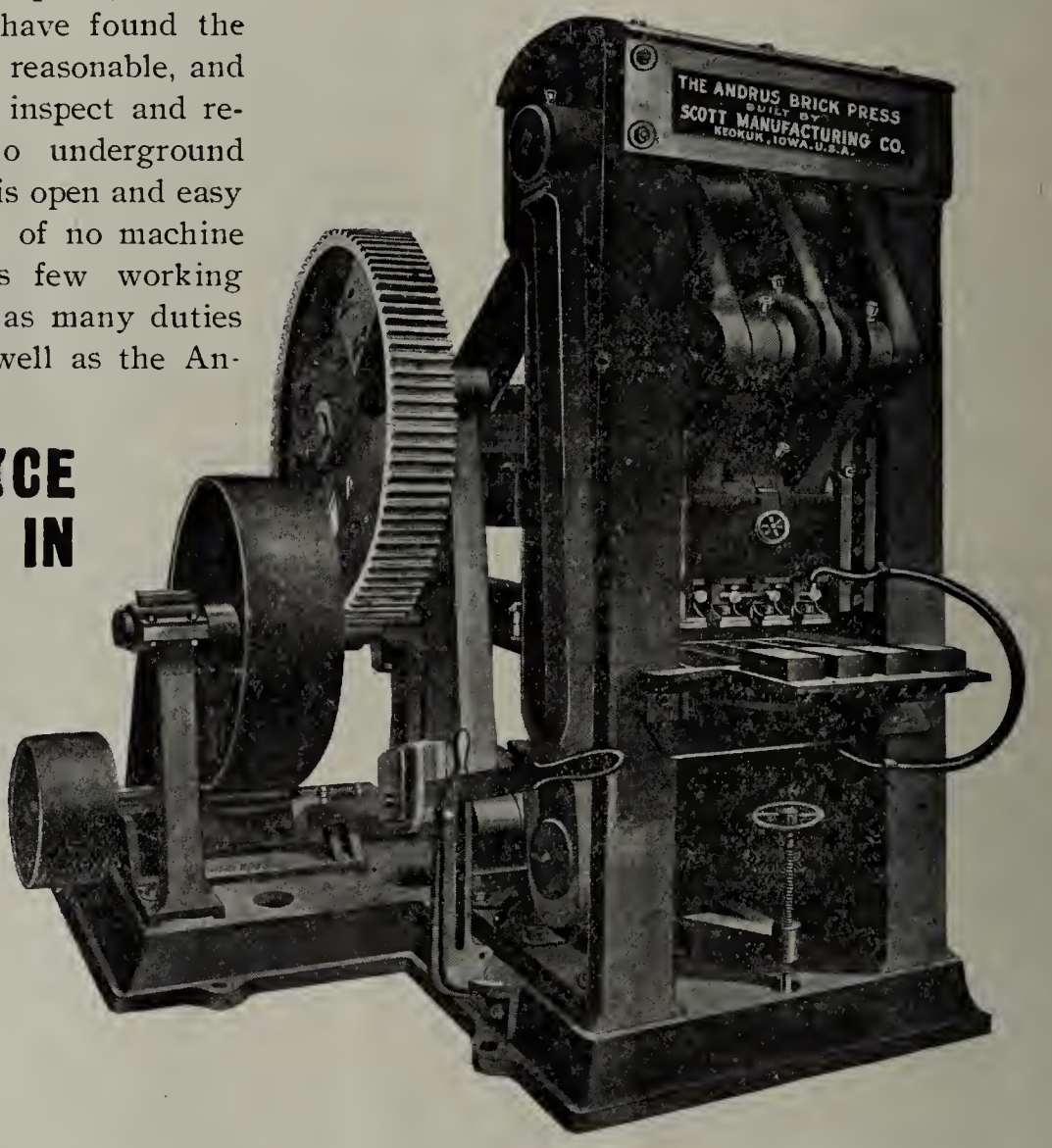
To show what they think of the machine illustrated below, we quote the following from their letter of recommendation:

"Owing to the simplicity of the Andrus Press, we have found the cost of operation very reasonable, and it is also very easy to inspect and repair, as there are no underground parts and everything is open and easy to get at. We know of no machine of any kind with as few working parts, that performs as many duties and does its work as well as the Andrus Press."

THE EVIDENCE IS NOT ALL IN YET.

We have letters here in our office from almost every state in the Union, all of which corroborate the above statements.

In addition to letters of recommendation, we have eighteen Andrus Presses in the St. Louis district "making brick every day."



THIS IS THE PRESS THAT SCOTT BUILDS.

SCOTT MANUFACTURING COMPANY

WORKS:
Keokuk, Iowa.

Commonwealth Trust Building

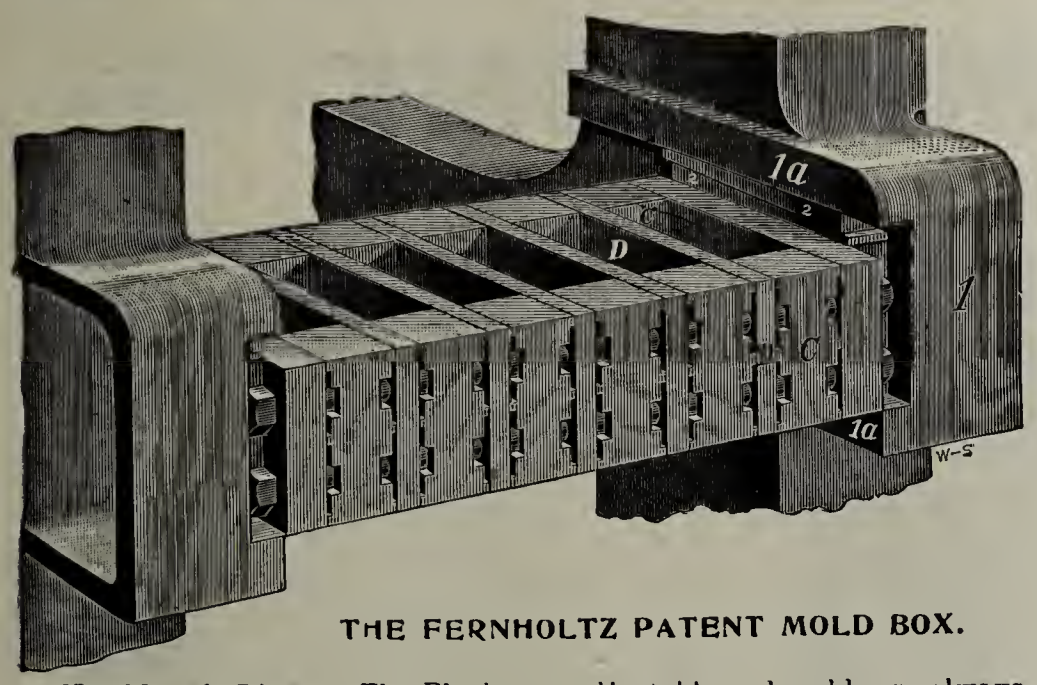
ST. LOUIS, MO.

THE FERNHOLTZ BRICK MACHINERY CO.

Manufacturers of

The Celebrated Fernholtz Dry Press

Four mold Press 20,000 daily capacity. Six mold Press 30,000 daily capacity

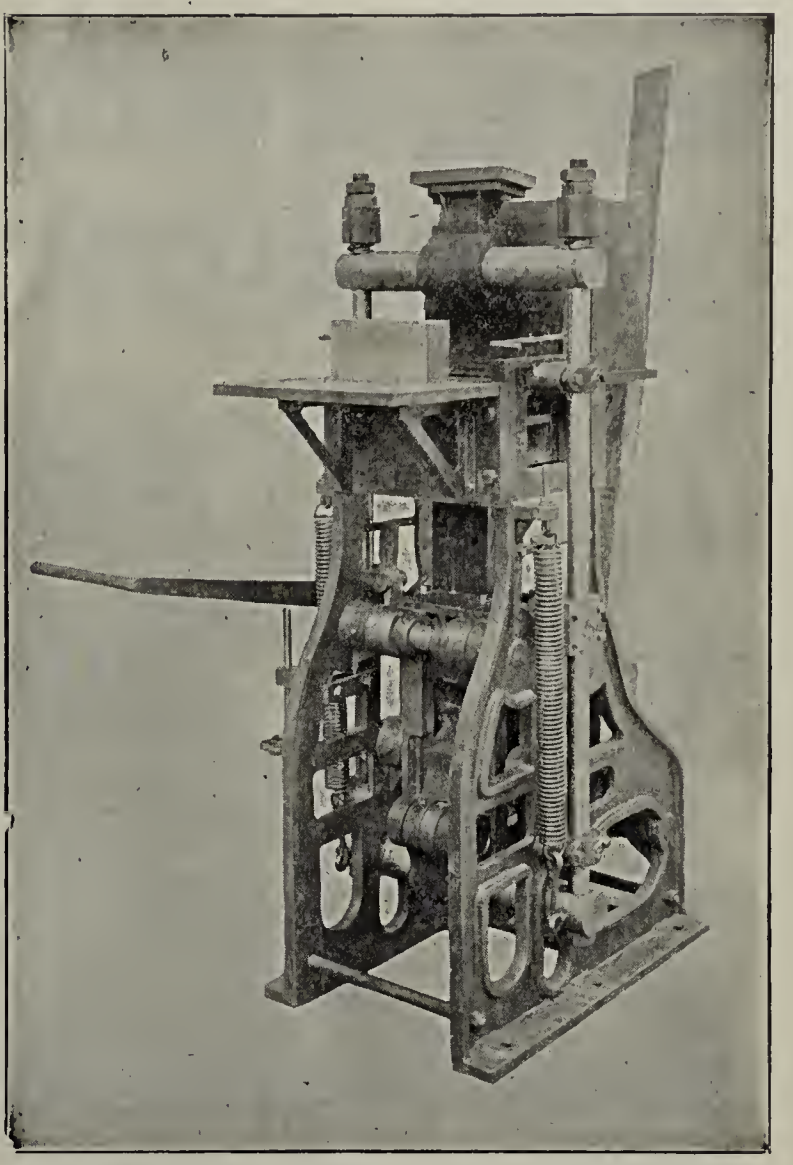


THE FERNHOLTZ PATENT MOLD BOX.

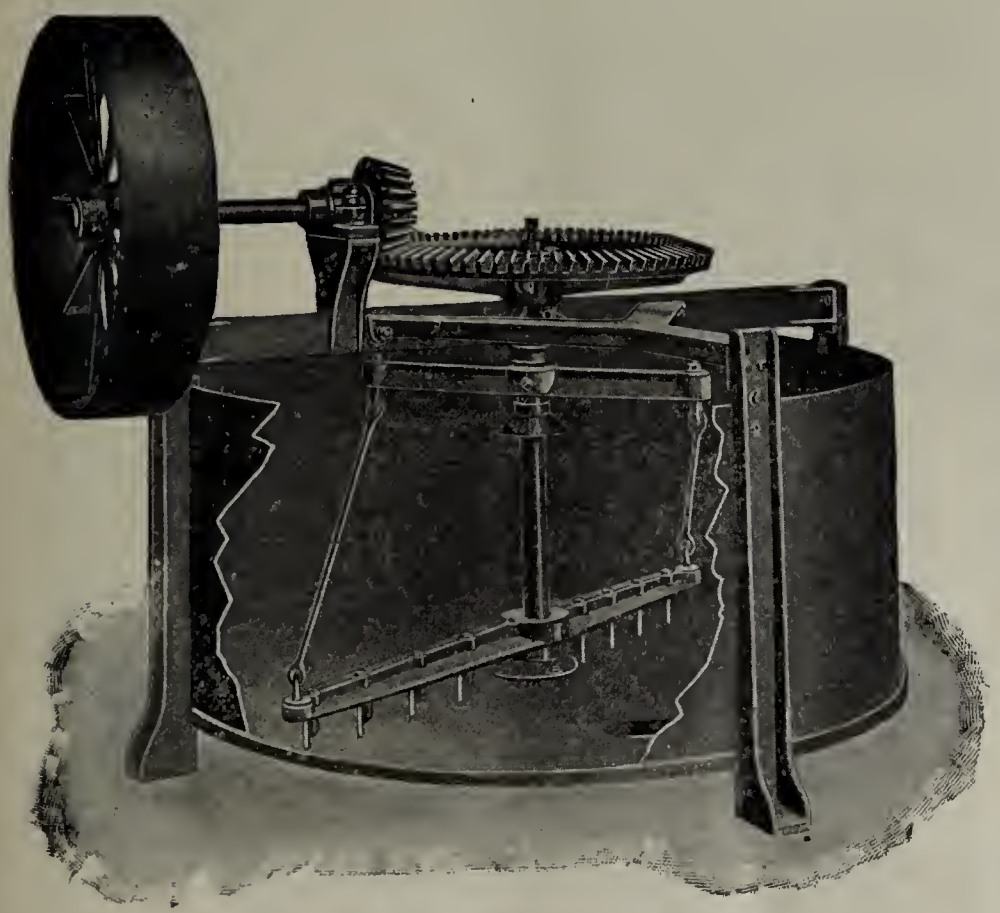
No old style Liners. The Blocks are adjustable and molds are always one size. We have put them in most all makes of Dry Press machines. Easily and quickly adjusted. They are made entirely out of chilled iron, the hardest known metal.

GRATH PATENT HAND POWER PRESS.

Especially adapted for ornamental designs Any size brick up to 12⅝ inches long, 10 inches wide and 4¼ inches thick.
Brick set into kiln direct from press.



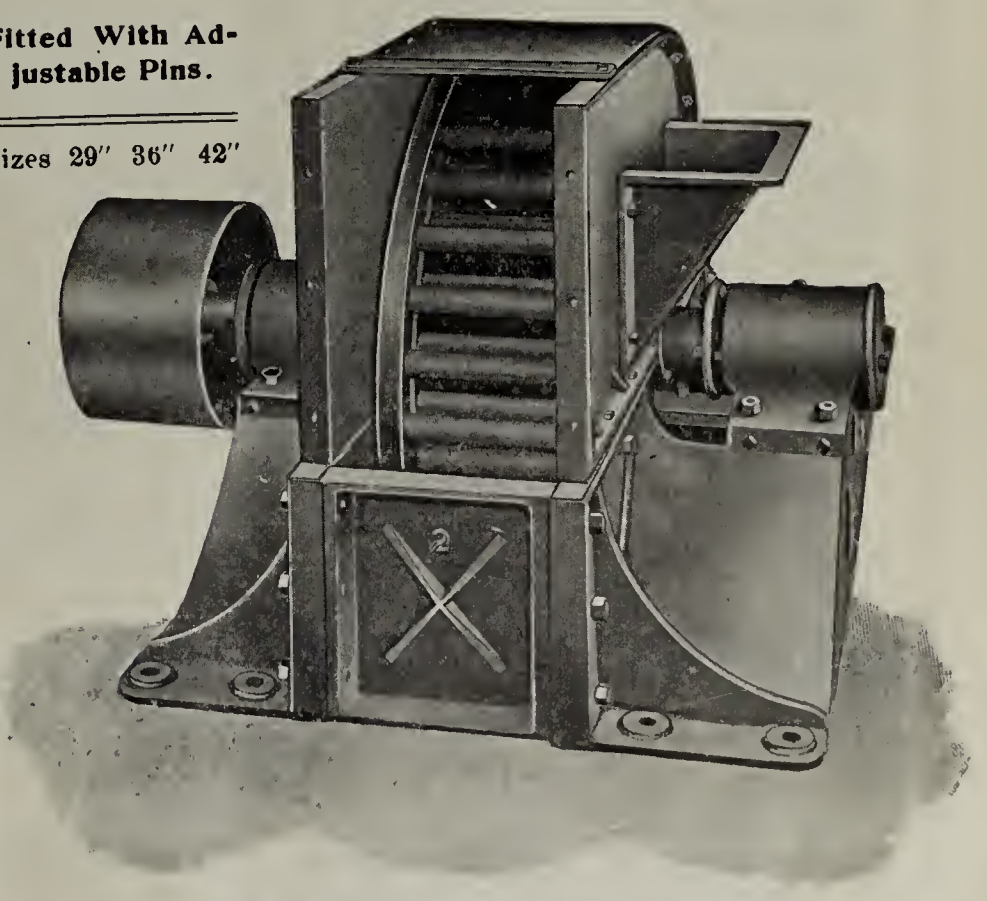
GRATH PATENT HAND POWER PRESS.



A GOOD MIXER IS ALWAYS APPRECIATED.

Fitted With Adjustable Pins.

Sizes 29″ 36″ 42″



THE FERNHOLTZ CLAY PULVERIZER.

The Fernholtz Brick Machinery Co.

Cable Address "Fernbrick." Western Union Code.

Boyle Avenue and Old Manchester Road, ST. LOUIS, MO., U. S. A.

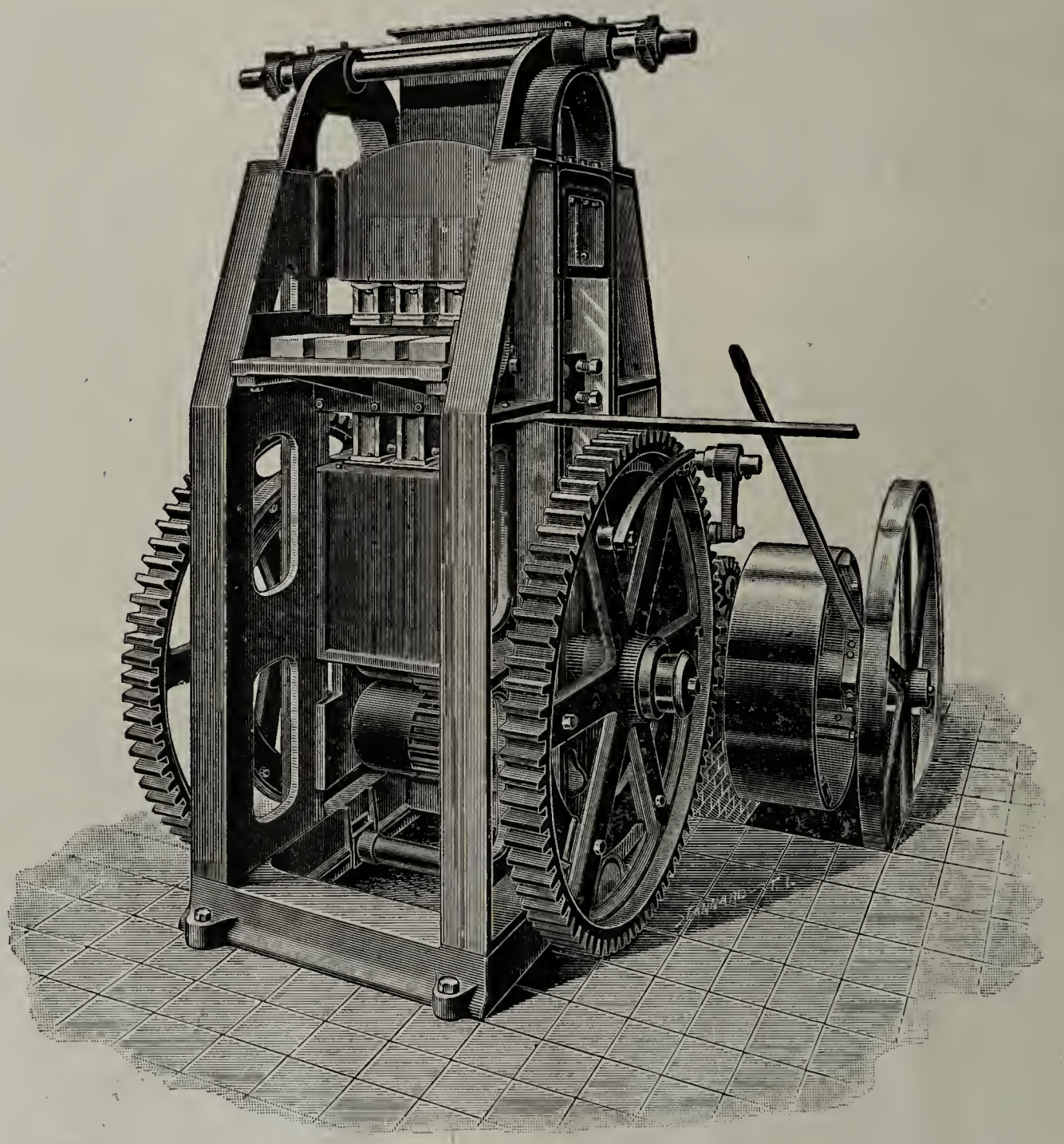
PERFECTION REALIZED

IN THE

RELIANCE DRY PRESS BRICK MACHINE

(PATENTED)

Main Features: Strength Durability Simplicity Saves Fuel and Costs Less



No Toggles No Links No Pins to Wear

STRONGEST AND MOST POWERFUL BRICK PRESS ON THE MARKET

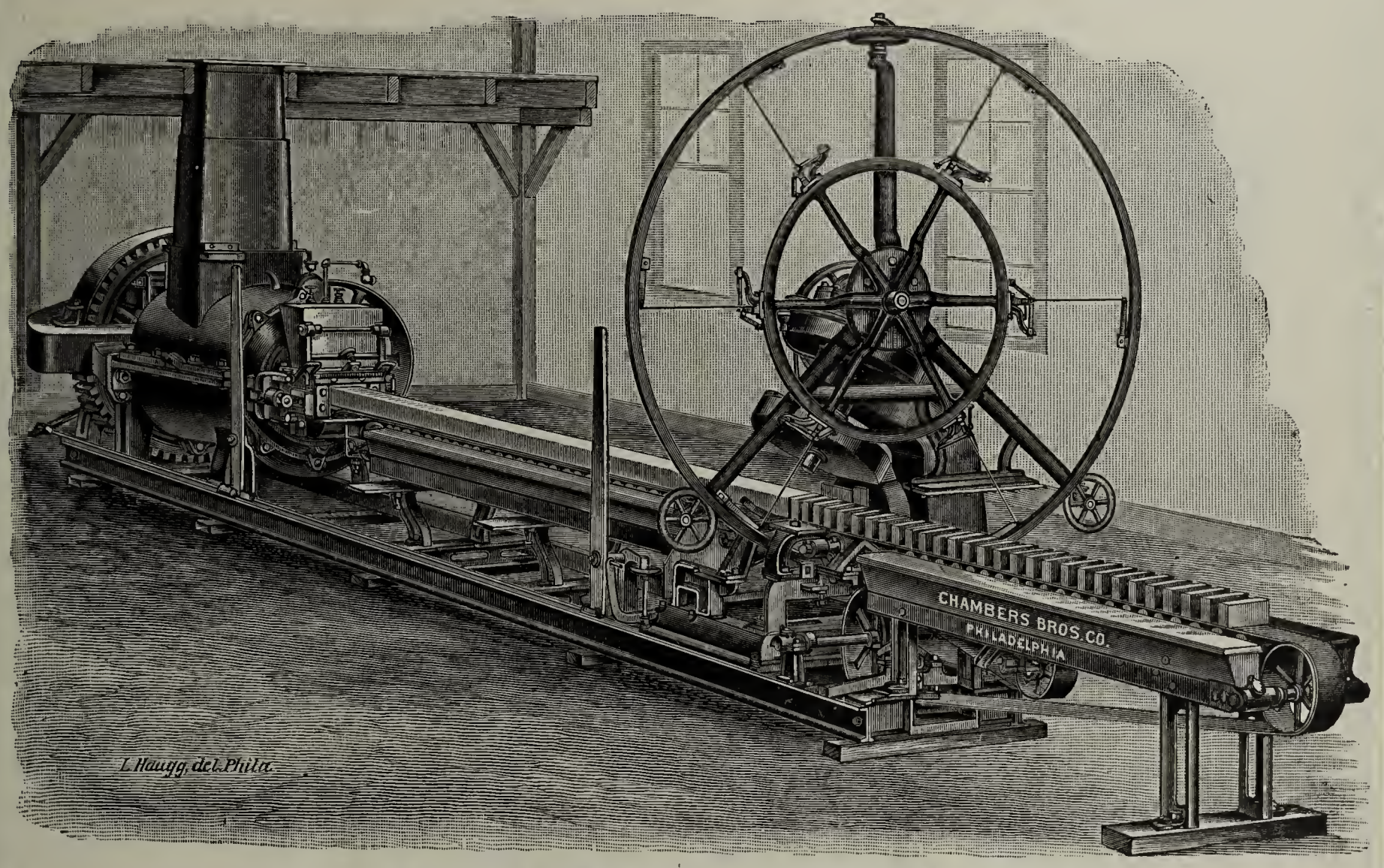
FOR PRICES AND FURTHER PARTICULARS ADDRESS THE

RELIANCE MACHINE AND TOOL WORKS

ST. LOUIS, MO.

MACHINERY FOR BUILDING BRICK
AND FOR STREET PAVERS

ROUND CORNER PAVING BRICK WITHOUT REPRESSING



THE CHAMBERS AUTOMATIC SIDE-CUT BRICK MACHINE.

Automatic End Cut Brick Machines of five sizes, having capacity from 10,000 to over 100,000 brick daily under favorable conditions.

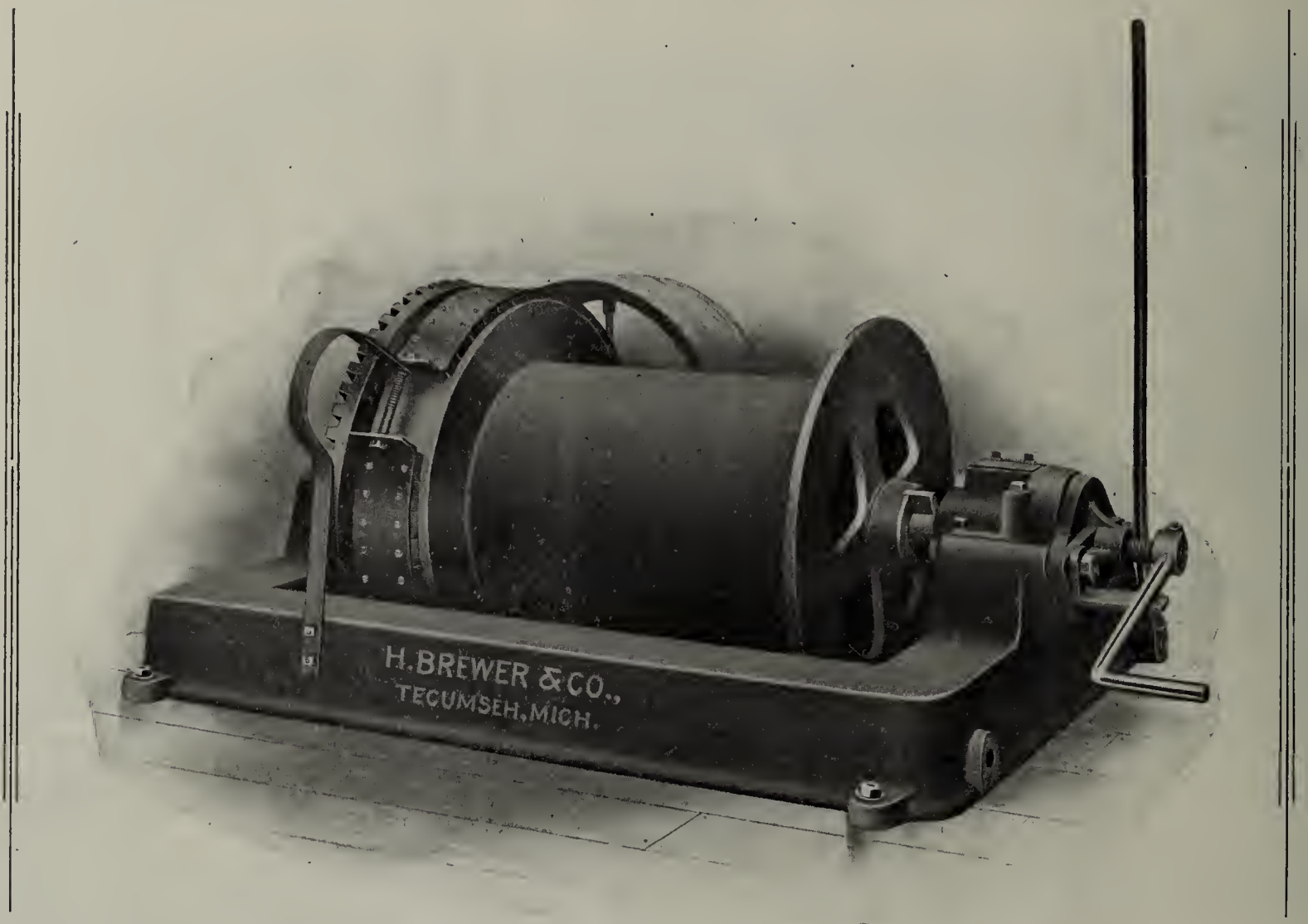
CHAMBERS BROTHERS COMPANY
52D AND MEDIA STREETS

E. R. FRAZIER, Chicago Agent,
59 West Jackson Boulevard.

PHILADELPHIA, PA.

DO YOU NEED A GOOD HOIST?

Here is one that will do your heavy hauling and stand up to the business. It's built the way a good machine should be built; quite a little better than used to be thought necessary. Frame and drum are one-piece castings; bearings self-oiling; wide brake-band.



SPECIFICATIONS

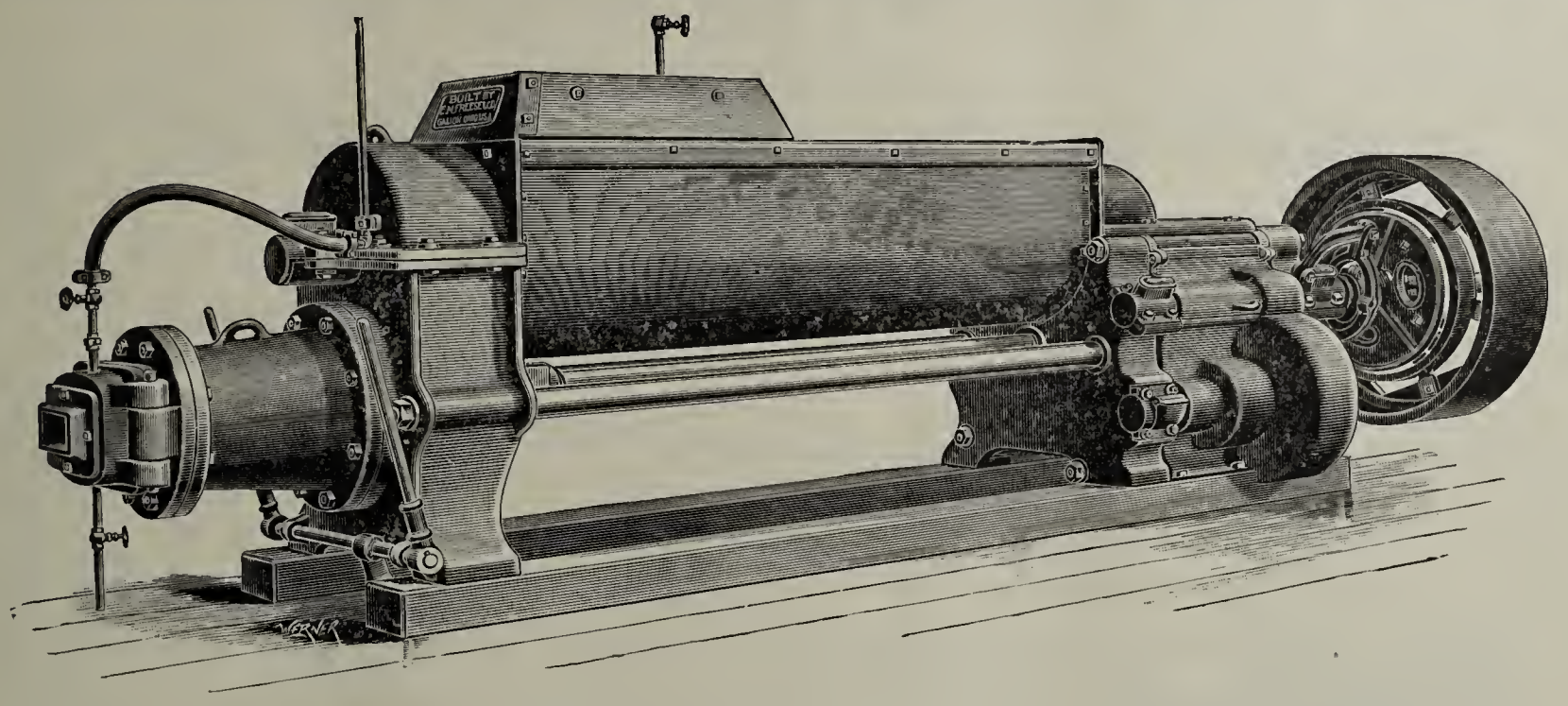
THE BREWER No. 28 BEVEL-GEARED HOIST

DRUM—20 inches diameter, 28 inches between flanges.
FLANGES—30 inches diameter.
GEARS—4 inches face, 1½ inches pitch.
DRUM SHAFT—3½ inches diameter.
DRIVING SHAFT—2½ inches diameter.
BEARINGS—Self-oiling.
BRAKE BAND—5 inches wide.
FRAME—64 inches long, 54 inches wide.
BRAKE LEVER—May be placed upon either side of drum crank.
PULLEY—30 inches diameter, 10 inches face. May be located as shown in cut or on opposite corner when so specified.
SPEED—250 to 300 revolutions per minute.
WEIGHT—3,000 pounds.

We have four different styles of hoist to select from, including spur-geared and bevel-geared machines, both heavy and light. All sold under guarantee of satisfaction at the right price.

H. BREWER & CO., TECUMSEH, MICHIGAN.

UNION BRICK MACHINES



We build these Machines in five sizes. Capacities to 10,000 brick per hour.

Several hundred are in everyday use. They do first-class work and are convenient, economical and durable. This can be verified by investigation.

We also build Brick Machines with separate Pug Mill.

Don't forget our Automatic Cutters. **They give satisfaction.**

State your requirements and let us furnish particulars.

E. M. FREESE & CO.

GALION - - - - OHIO

LAMINATION is the source of more loss, more worry and more anxiety than all other troubles of a brickmaker

KENTON C READ, Pres. ANDY O'CONNELL, Vice Pres. and Gen'l Mgr C. M. MILLER, Sec.-Treas.

THE

C. M. Miller Mfg. and Mining Co. Inc.

MAKERS OF

High Grade Veneer and Building Brick

Office, 331 Ohio Street.

New Phone 1142.

Terre Haute, Ind. Dec. 22. *1904*

Mr. H. L. Hix, Mgr.

The Wallace Mfg. Co., Frankfort, Ind.:

Dear Sir—I feel that I must tell you my experience with the brick made on the Intermediate Wonder:—

A few days ago a very prominent contractor asked me to bring him some samples of our brick. I fixed up some samples and started to his place, and just as soon as he saw them, he said: "I don't want them—they are no good; I would not lay one of that kind of brick," but I begged him to look at them and tell me why he did not want them. He asked me if he could break one of them, and I said, "Yes, break all of them." So he took his hammer and hit one on the corner; then he looked up at me and said: "I never saw a stiff mud brick like that;" then he broke it all up, just as nice as any brick, and he said: "That is the first stiff mud brick I ever saw without lamination," and that they were all right.

We are now selling our brick as fast as we can deliver them.

Pardon me for taking your time, and with SUCCESS to the WONDER, I am,

Yours very truly,

Andy Connell
V Pres and Gen Mgr.

In the event that you want to make brick filled with LAMINATION, CRACKS and CROOKS, a Wonder Machine will not answer your purpose.

THE WALLACE MFG. CO.

FRANKFORT, IND., U. S. A.

Highest point of perfection achieved by the **WONDER.**

It works clays where other machines fail.

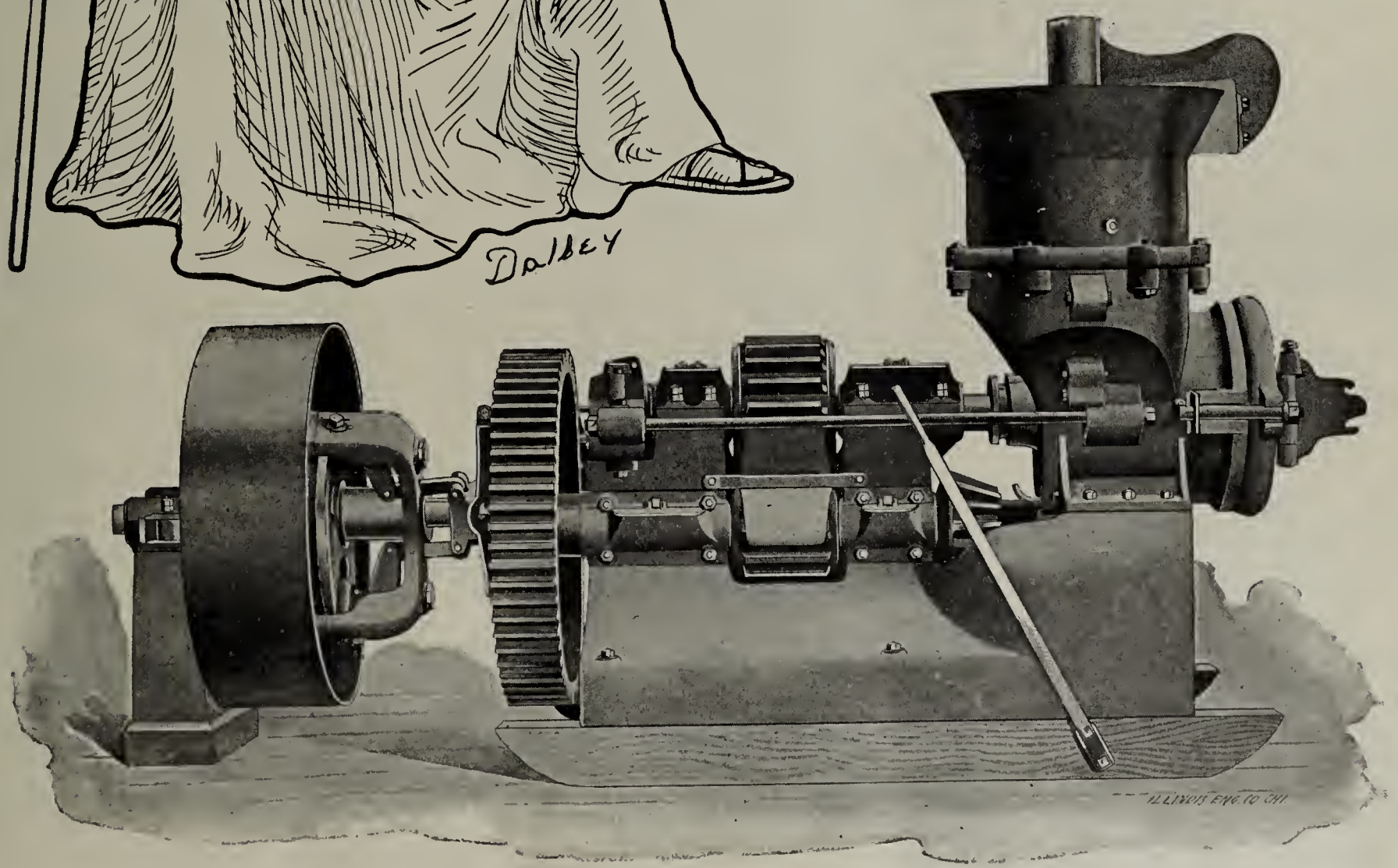
We are specialists in our line and difficult cases are sent to us for treatment.

Our experience has been large and varied, and may be of value to you.

Our service is yours for the asking.

Write us.

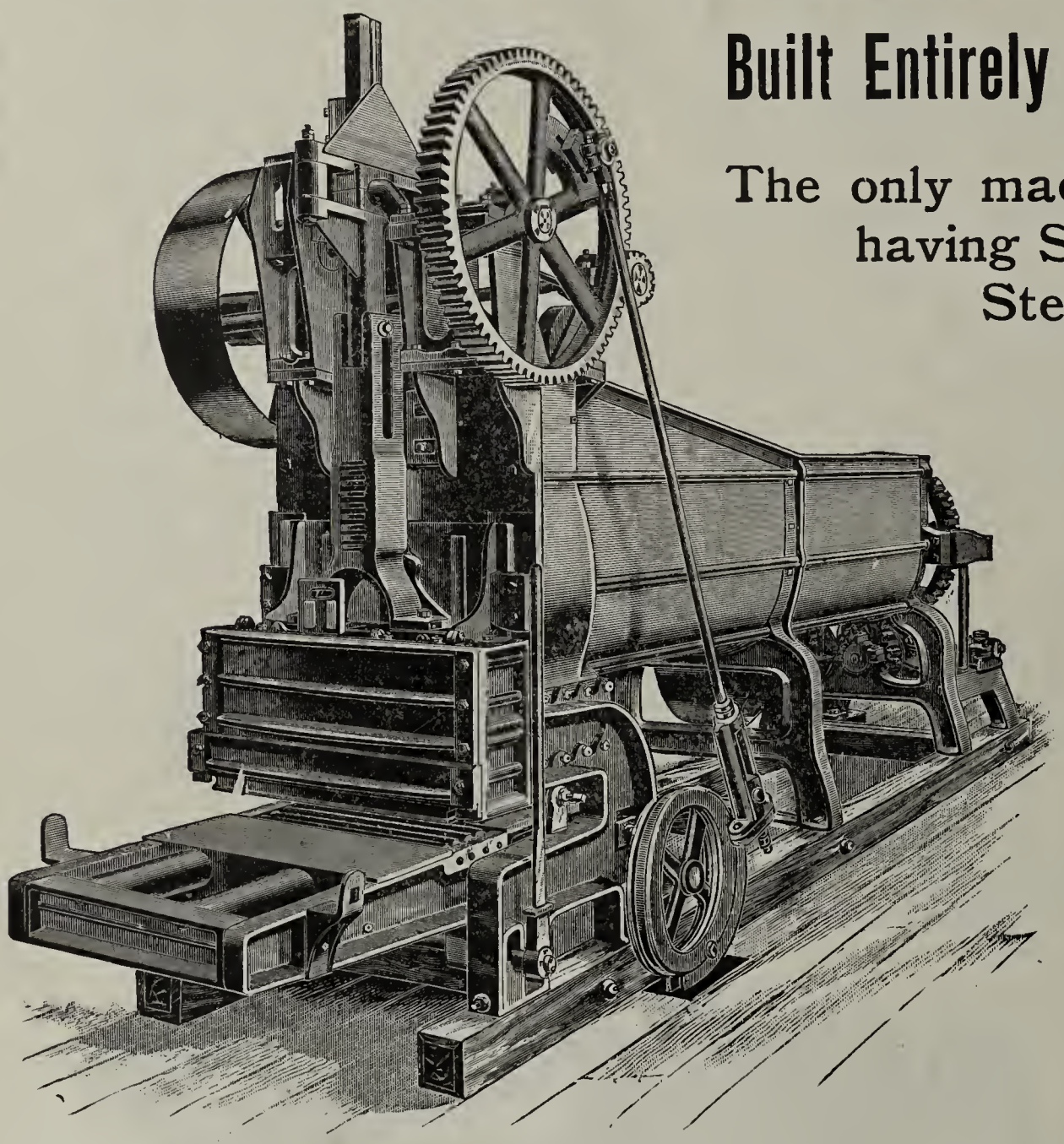
Our line is complete. We manufacture Brick Machines, Drain Tile Machines, Brick and Tile Cutting Tables, Automatic Cutters, Clay Preparing and Clay Reducing Machinery, and a full line of Brick and Tile Yard Supplies.



The Wallace Mfg. Co.

FRANKFORT, IND., U. S. A.

THE POTTS
HORIZONTAL BRICK MACHINE



Built Entirely of Iron and Steel.

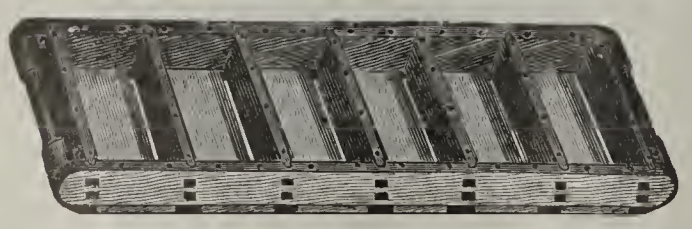
The only machine of this class having Steel Gear and Steel Shaft.

Built of the Best Material by the Best Workmen.

Simple, Strong and Durable.

No extra pug mill required to enable working the clay direct from the bank. Its great strength enables working the clay as stiff as practicable, insuring brick which will be STRAIGHT and SQUARE.

THE LEADER OF ALL SAND MOULD MACHINES.



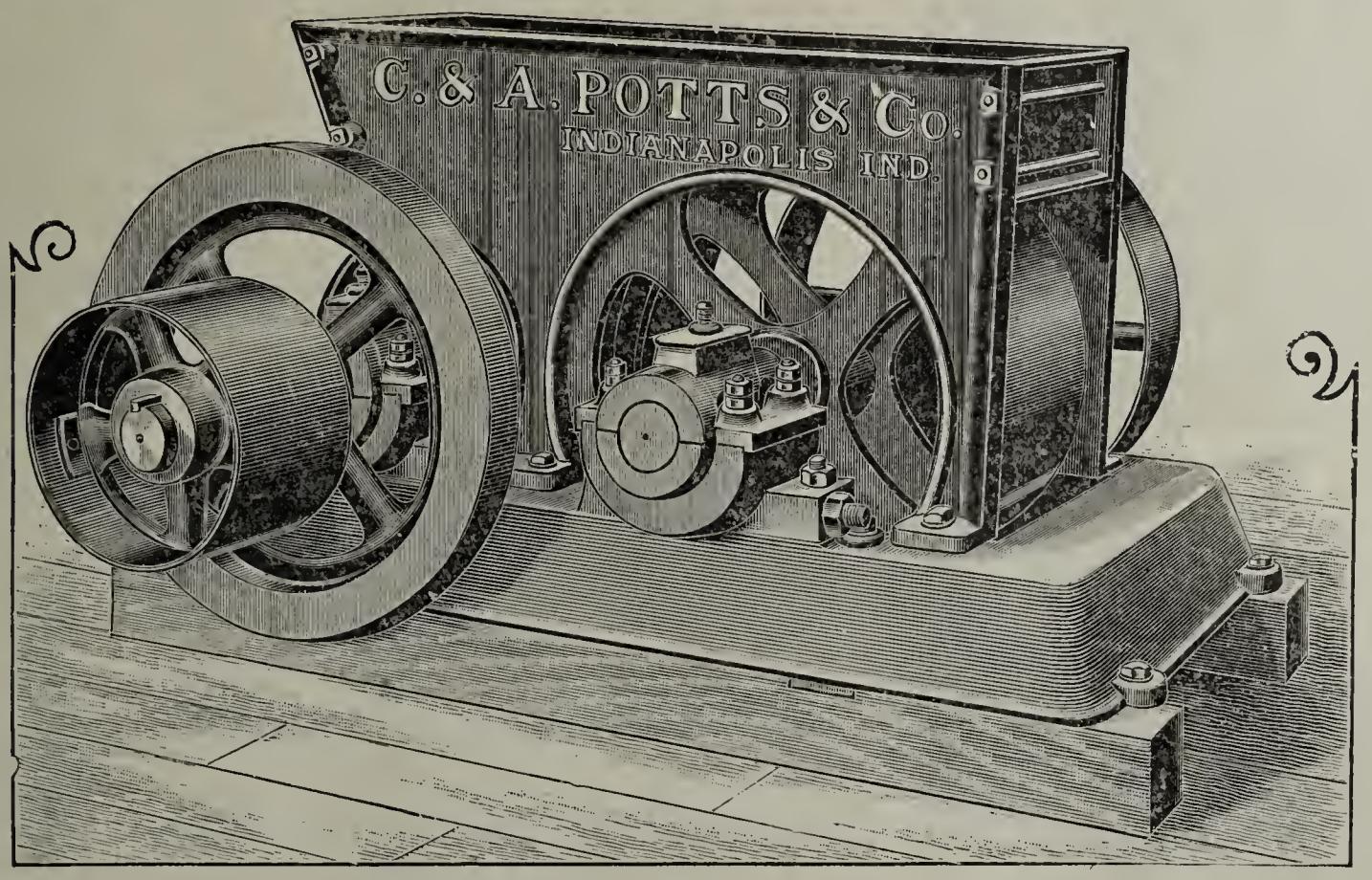
BRICK MOULDS A SPECIALTY

QUALITY IS OUR AIM.

We manufacture a complete line of Brick Yard Supplies. Write for prices.

C. & A. POTTS & CO., Indianapolis, Ind.

THE POTTS DISINTEGRATOR



Is not a spite machine, but is built the best possible. Having Heavy Chilled Rolls, Ring Oiling Bearings, Shafts of Steel and large in Diameter. The most successful machine for grinding out sticky clays and separating the stone.

THE POTTS MOULD SANDER

Simple in Construction,

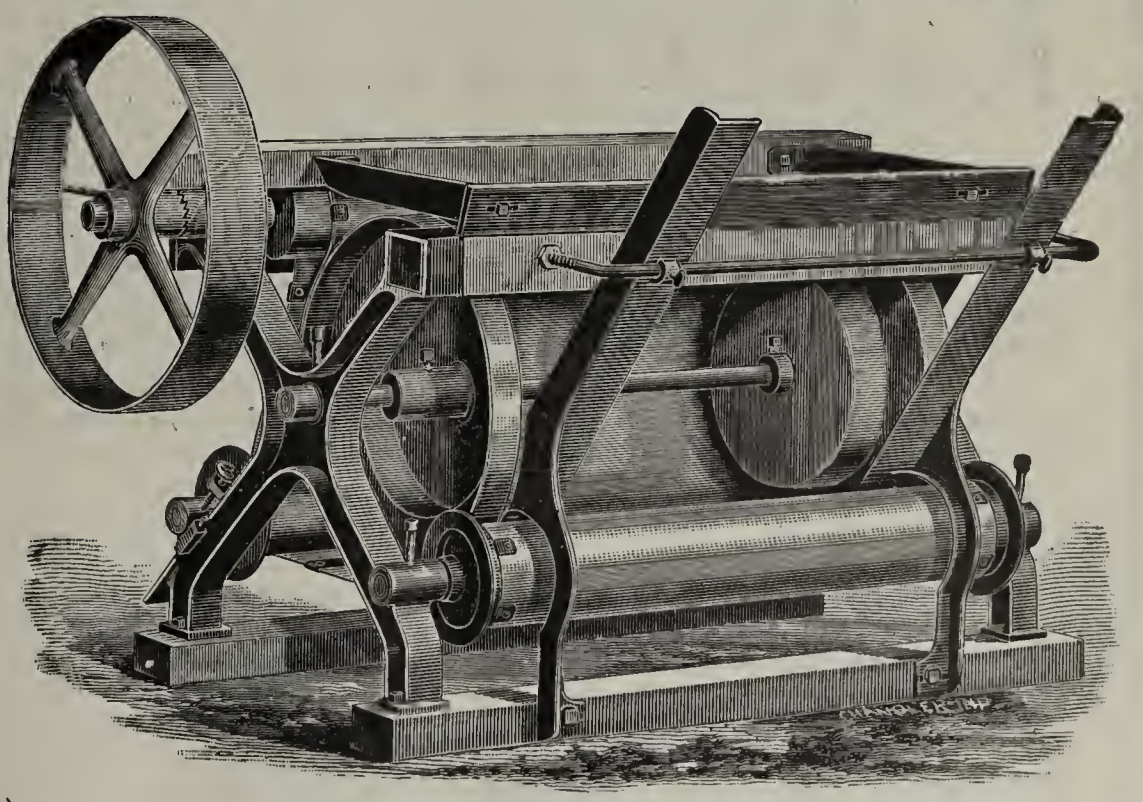
Strong and Durable,

Sands the Moulds Perfectly,

Never Strikes or gets Drunk,

Always Ready for Work,

No Brick Machine Complete without this Machine.



Patented February 5, 1889.

We make a specialty of equipping Sand Mould plants complete. We are the largest manufacturers of this class of machinery in the world. Write for prices.

C. & A. POTTS & CO., Indianaoplis, Ind.

YOU have extra profit going to waste in your plant and you don't realize it. Your fuel can be made to do double duty.

It's like burning money, and we none of us have "money to burn." If we were to tell you right out how much money you could save in a year, you would hardly believe it. You might even question our veracity—but let us show you. You are drying your product expensively. We can save you more than a half that cost. Even if your drying system is the open air and the free sunlight, we can save you a half. True, you get the sun and air free, but look at the labor, the slowness and the uncertainties.

We build all kinds of dryers, not because they are all best, but because in many cases no one certain dryer will do the work successfully.

Clays are peculiar, and we prefer to sell every man a dryer that is the very best adapted for his clay rather than unload upon him something that is likely to be unsuccessful just because it's the only dryer we sell. That's why we build all kinds of dryers. We want to meet your individual needs, and treat you so fairly that you will be our customer always. Isn't that a fair proposition? Think of what it means to you! Your success may rest upon it, and our success depends, in a measure, upon your own.

Now then, we want to say a few words in particular about our Waste Heat Dryers. We will take the heat from your kilns, no matter what kind of kilns they are, down-draught or up-draught, either permanent or scove kilns, and use that heat to dry your brick.

In burning in an up-draught kiln, it is a well-known fact that fully a half of the heat escapes from the top of the kiln and is lost. We utilize this waste heat from the kilns that are burning to dry your product. We also utilize the waste heat while the kiln is cooling.

It's an attractive proposition. One which you should look into from a money-making stand-point, as it is an absolute success.

Remember, we are specialists on Waste Heat Dryers. We are pioneers in the business and have brought them to their present state of excellence. Our Waste Heat Dryer department has been given most careful study, most tireless research, unflagging energy and unstinted cash to make it as near perfection as can be attained.

WE BUILD OUR OWN FANS. Every pound of metal that goes into them passes our own inspectors. Every bolt hole is punched under the eyes of our own men. Every rivet is pneumatically driven by our own workmen under our own superintendent.

In a word, we KNOW WHAT OUR FANS ARE. We build them and we are positive they are "Built Right and Run Right." You will find this trade-mark on every one of our fans—"Built Right, Run Right"—and it means exactly what it says.

Were we to buy our fans and other apparatus in the open market under bids, the fan manufacturers would want a profit The fan competitors naturally would strive to get the order, and to get it would cut the cost where possible and in the end you would have an inferior job in your plant. We can't afford to risk quality, because the permanent successful operation of the dryer rests largely upon it. If we make such a pronounced stand for quality, why shouldn't you? It means most of all to you. You pay for the dryer and the success or failure of your plant depends upon it. We want to remove, so far as possible, all chance of your failure. That's why we build our own fans and other dryer apparatus, so that we may be SURE that our part of your plant is a success maker.

It is important if you have a dryer proposition to consult our dryer engineers. They are experts on Waste Heat Dryers, and will look over your yard and design you a dryer system to meet your needs. There are lots of points which bear on the successful operation of a Waste Heat Dryer. These should be considered.

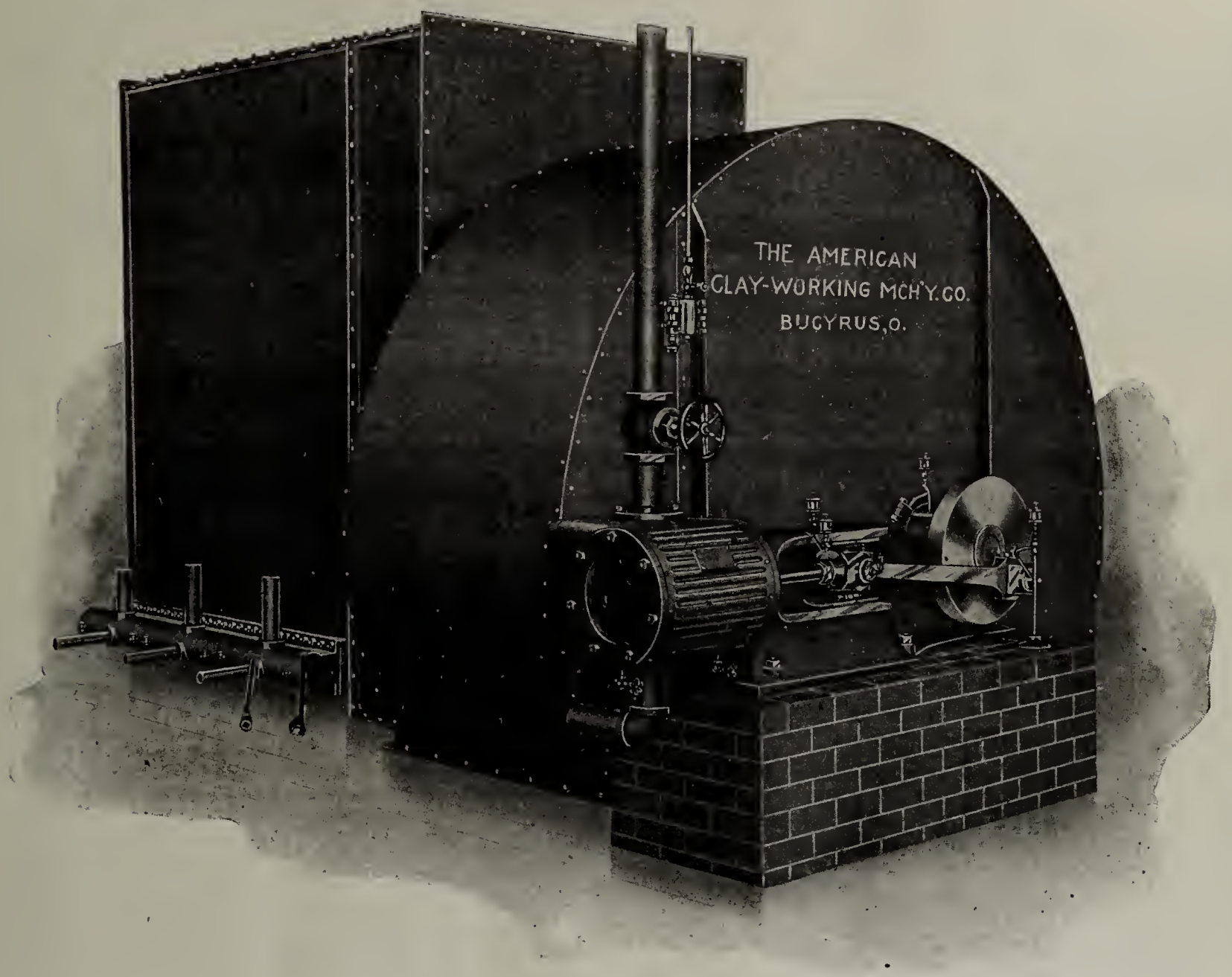
A dryer of any particular construction that would work perfectly for your neighbor, might be unsuccessful on your yard because of different conditions which are not apparent to you.

There is nothing like correctness of construction, and that is what we insure If we take the commission of building you a perfect dryer you will get it We first study your conditions and then design the best dryer to work under those conditions. THEN WE BUILD THE WHOLE OUTFIT IN OUR OWN SHOPS. We don't buy outside and divide the responsibility. When that dryer is done we are sure that it is "Built Right" and will "Run Right" Isn't it best to deal that way?

Write us about your drying proposition. We can improve your conditions and increase your profit. Remember we are the only dryer people who can give you the DRYER YOU NEED, and we are the only people who MAKE THE WHOLE OUTFIT IN OUR OWN SHOPS Ask for list of parties using our Waste Heat Dryers. Go and see some in successful operation. Our catalogue of dry cars, turn tables, transfer cars, etc., is yours for the asking. We build a full line of clay working machinery and appliances. No matter what you want to make, if it is made out of clay, we can furnish the apparatus, whether it be Brick, Tile, Pottery, Cement, Sand-Lime Brick or Sewer Pipe.

Why Use Fuel to Dry Your Brick and More Fuel to Burn Them?

ONE LOT OF FUEL WILL DO BOTH



WASTE HEAT DRYER APPARATUS.

Built Right Run Right

THE AMERICAN CLAY MACHINERY CO.

BUCYRUS, OHIO, U. S. A.

Built Right Run Right

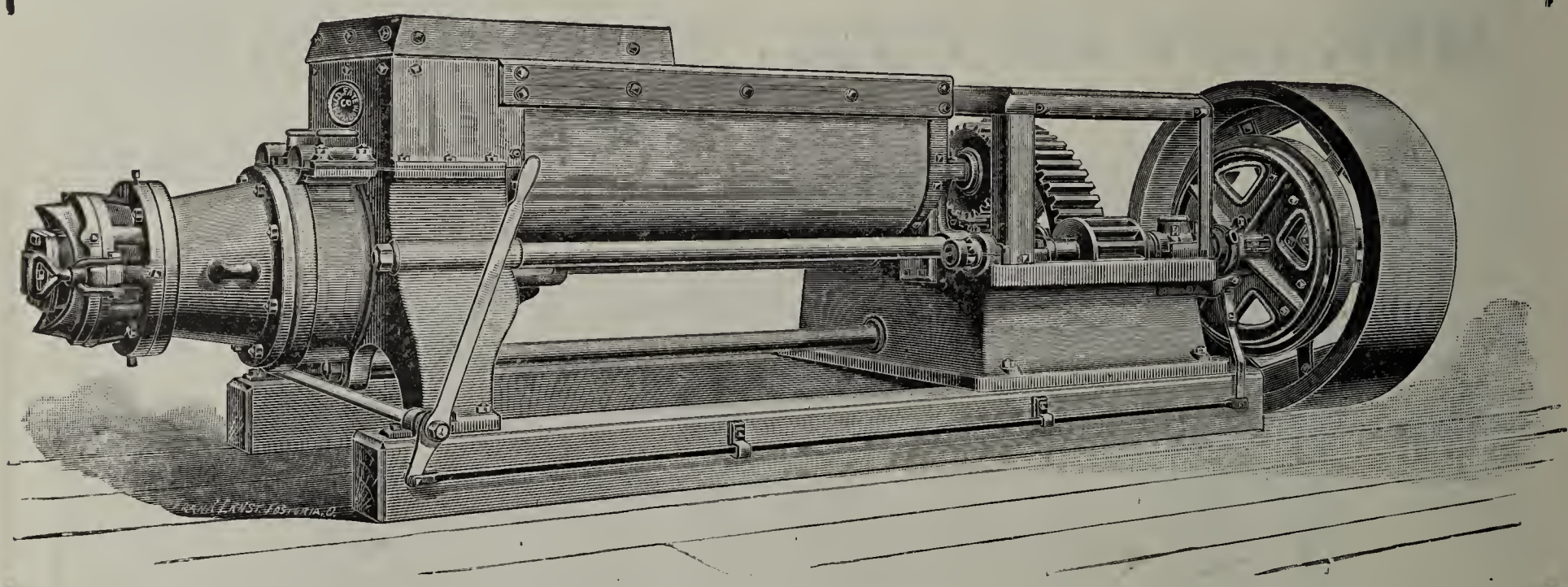
Manufacturers of Everything Needed by Clayworkers.

THE "PREMIER"

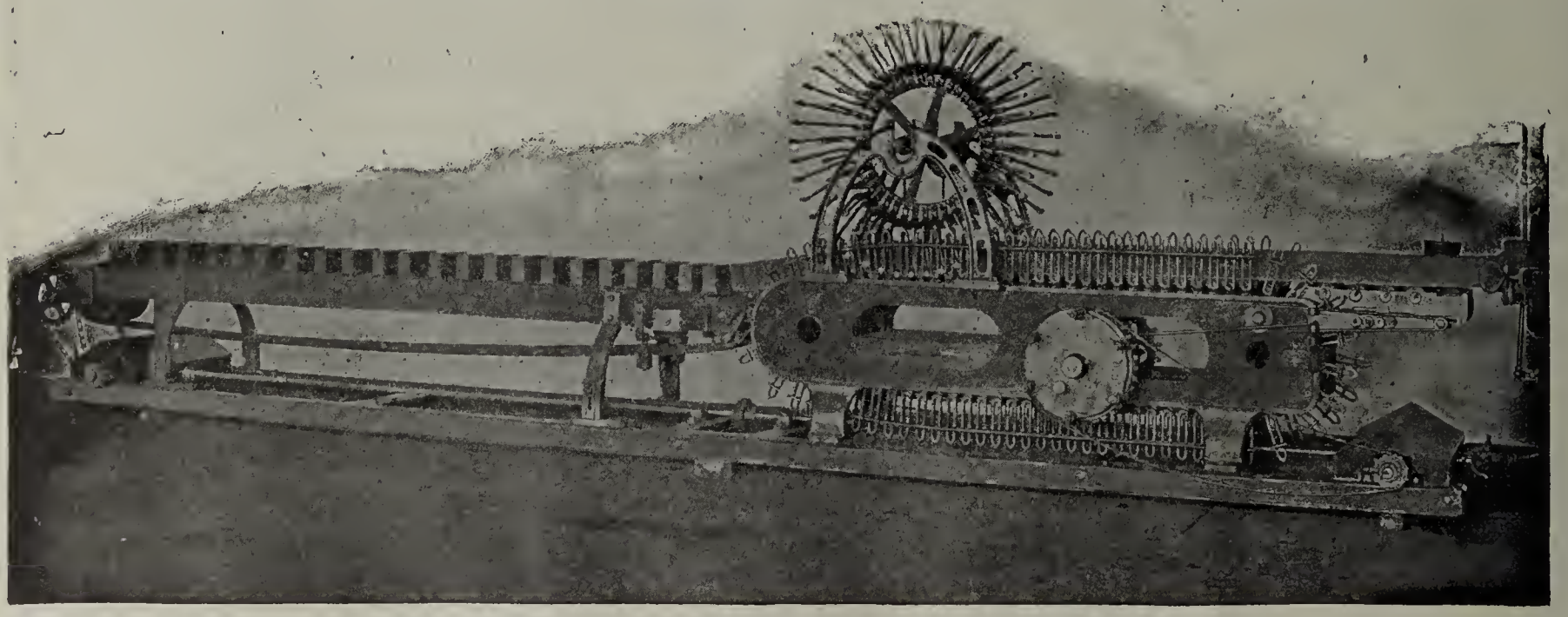
Combined Brick Machine

THE PREMIER LINE — THE J. D. FATE COMPANY

THE LARGEST LINE OF AUTOMATIC CUTTING TABLES IN THE WORLD



WITH BENSING'S AUTOMATIC SIDE-CUT BRICK TABLE.



Make a combination of Brick Machinery which is pronounced by practical brick makers to be the most perfect arrangement of stiff mud machinery now on the market.

It is unequaled for strength, durability, capacity and quality of ware produced.

Write us for catalog and full particulars of the "Premier" line of Clay Working Machinery.

THE J. D. FATE CO., - Plymouth, Ohio

WESTERN REPRESENTATIVES:

B. E. LA DOW, 701 Dwight Bldg., Kansas City, Mo.

Pacific Coast: LEW THORNE, Grand Hotel, San Francisco, Cal.

CLAY RECORD

Vol. XXVII. No. 2. CHICAGO, JULY 31, 1905. Semi-Monthly, $1.00 per Year Single Copies, - 10 Cents

MISSED HIS TRAIN BUT MADE THE BEST OF IT.

When you have to change cars in a very small town and are advised upon arrival that you have missed connections because your train was ten minutes behind time and that the next train won't be in until four hours later, you are apt to be in pretty bad humor. However, I resolved to make the best of a bad job, took my camera and looked around for something interesting.

"Anything doing in the manufacturing line in North Judson?" I inquired. "Nothing much," was the reply. "We have a cannery but that isn't working just now, a brewery which of course is always working and a brick yard where they make brick out of sand." "Out of sand?" I asked in astonishment. "I thought brick is generally made out of clay?" "It generally is, I reckon," said the farmer, "but they say this is a new process and the brick is very fine indeed." Being a lawyer, and therefore of an inquisitive nature, my curiosity was excited to a considerable pitch and I forthwith took horse and buggy to see the brick plant.

Main Building of the Indiana Sand-Lime Brick Co., North Judson, Ind.

The first man I met was Mr. J. H. Shoup, the superintendent, who politely informed me that no visitors are admitted to the factory, but fortunately the severity of his features relaxed after I had explained to him my predicament, stated my profession and confessed absolute ignorance as to technical affairs. For the latter assertion I found ample proof in the subsequent conversation and if Mr. Shoup was versed in the teachings of Confucius he must have remembered, "Verily, the fool asketh more questions than seven wise men can answer."

Mixer which Receives the Raw Material.

As the plant is practically located on the sand bed itself, we did not have very far to go to see the raw material. It is a clean sharp sand of brown-gray color, quite coarse but with enough fine material in it to fill out the voids between the larger particles, as Mr. Shoup explained. It is first elevated to a revolving screen where roots and other vegeta-

ble matter are eliminated and then it is carefully measured into a large pan. Pulverized lime is added at the same time—about one part to every nineteen parts of sand, and by means of a rapidly revolving agitator the two raw materials are converted into a perfectly homogeneous substance. Through an adjustable slot in the bottom of this pan (the

The Presses, with Conveyor Overhead and Elevator in Background.

pan holds about 23 cu. ft. and is kept full to the brim all the time), the material drops into a long pug mill where it is thoroughly beaten up and then elevated by means of a bucket elevator to a second mixer, mounted on a platform, for another beating up; after this ordeal, the stuff drops into a slowly moving scraper conveyor for delivery to the presses.

These presses, three of them, are very heavy and strange looking affairs. Just how they work I cannot tell, although

Putting a Carload of Green Brick into the Drying Cylinder.

Mr. Shoup in his kindness took great pains to explain their mechanism to me in detail. He seemed to be quite proud of this acquisition, for he stated that when the Indiana Sand-Lime Brick Co. was called into being, he traveled all over the country on a tour of inspection and finally made up his mind that the Semisteel Co., a Cleveland (Ohio) concern, not only had the best presses (and the presses are the life of the whole thing, he added), but also the best machinery for the rest of the plant and that they are the most experienced people in making this kind of brick. However that may be, all I could make out was that every time the revolving table had finished a quarter of a turn, a brick with very smooth surfaces and sharp edges and corners made its appearance on the top of this table, was taken off by a boy and gently set on a flat cast iron car. I say gently, because if you handle those brick, which consist of nothing but sand and a little bit of lime, roughly you spoil the edges and corners—yet they were hard enough when laid on the ground to bear my weight without breaking. When a car

Closing Up Drying Cylinder.

was completed—I counted a little over a thousand brick on each car—it was quickly pulled away from the press and an empty car put in its place. "It takes about one hour to an hour and a quarter to make a load," Mr. Shoup explained. "It all depends on the boys, you know. The press will make as many as 22 brick per minute."

The loaded cars were transferred into a long tube or cylinder about 6 feet in diameter, and when a cylinder has received its charge of nine cars, a heavy head is bolted onto its front end and live steam turned on (see photo No. 5). This is the hardening process, the heat of the steam effecting a chemical combination between the lime and the sand and gluing all the particles firmly together so that when the cylinder is opened after about 8 or 10 hours the brick come out snow white and as hard as the best sandstone.

After my tour of inspection was at an end I had the pleasure of meeting Mr. F. C. Tracey, the president; Mr. Silas Myers, the secretary, and Mr. Jacob Keller, a stockholder of the company and an old clay brick manufacturer and a wealthy land owner in North Judson, all of whom where just then engaged in closing up a deal with a contractor from a neighboring town for 75,000 brick to be delivered immediately. I expressed to them my gratitude at having been permitted to see the factory and complimented

Taking out a Carload of Finished Brick.

them on their good investment. "Yes, I think we have a pretty good proposition on hand," said one of the gentlemen. "We only started up about ten days ago, but, as you see, we have not a single brick on hand. The output of the first three days made up the first car load, and since then we have been shipping a car every two days. We only have to produce 11,000 brick to make our expenses, but so far our output has averaged about 18,000 per day, and in a week or two when our boys are all thoroughly used to the handling of the green brick, there will be no trouble in turning out the full amount of 27,000 brick right along.

To me, the rapidly moving machinery, the cheerful looking boys setting down one perfect brick after another in quick succession, the absence of all confusion and undue noises—for each man seemed to know exactly what he was about—and finally the string of small railway cars loaded with beautiful brick and the contented countenances of the owners, looked like very prosperous business and I did not regret in the least to have been compelled to spend a few hours at North Judson, Ind.

Paul M. Williams has bought the plant of the Glens Falls (N. Y.) Brick and Terra Cotta Co.

BRICK INDUSTRY WILL BOOM NOW ON THE HUDSON.

Negotiations between Albert A. Gerry, of Reading, Pa., and the Eastern Paving Brick Company, for the sale of the paving brick plant in Catskill, N. Y., the shale beds in Cairo and all of the old shale brick property to the United States Paving Brick Company, were completed when a deed was filed with County Clerk Greene, transferring all of the property to the new company for the sum of $60,000.

The deal was made between Oliver M. Stafford, of the Eastern Paving Brick Company, and Mr. Gerry as president of the United States Brick Company. The deed is a lengthy document and calls for the transfer of several parcels of land. The shale beds in Cairo and Catskill, the brick plant in the village, the continuous kiln which stands on the site of the "Old Stone Jug," the office in the village, the rights of way were all transferred. The deed also carries all machines, machinery, kilns, steam shovels, crushers, engines, boilers, tools, implements, repressers, brick drying cars, railroad cars, railroad ties and rails, shafting, pulleys, belts, all fixtures, office furniture, desks, safes and vaults now on the premises.

The Eastern Paving Brick Company is now out for good. The new company, which is one of the foremost in the world, is already placing the plant in shape and with its purchase of extensive territory between Catskill and Smith's Landing, promises to boom the brick industry in Catskill.

Rear End of Plant, Cylinder Shed in Construction.

THE NORTH-WESTERN LINE CHICAGO TERMINALS.

A descriptive pamphlet with large scale map of its extensive and complete terminal facilities at Chicago has been prepared by the Chicago & North-Western R'y. This will be of interest to industrial concerns located on these terminal lines, and more especially to those seeking new sites with adequate railway conveniences. Send for free copy to Industrial Department, C. & N. W. R'y, Chicago, Ill.

The Eastern Concrete Machinery Supply Co., Akron, N. Y., has been organized with James R. Thomas and Harry P. Thomas as the promoters. They will furnish machinery for making concrete blocks and brick.

FIRE BRICK INDUSTRY IN OHIO VALLEY IS MOST PROSPEROUS.

The fire brick industry along the Ohio Valley was never in a more prosperous state within its history, judging from the output and active shipments. Paving brick, however, does not seem to be in the greatest demand, for many of the yards have turned their attention to the manufacture of the better grades of building material—mottled and pressed brick, and some of these are indeed of fine quality.

The Toronto Fire Clay Co. still retains its prestige in the fire brick trade, and has been running steadily so far, turning out more of the product than in previous years. The Minor Fire Clay Co., at Empire, is adding to its capacity by the erection of a number of new kilns. The Standard, of the same town, is running to its fullest capacity, and shipping nearly as fast as manufactured. There seems to be some cessation in the trade at Wellsville, the McLean Bros. being engaged in the erection of new kilns and placing some machinery. The Vulcan works, however, is doing a fairly good trade. Vanport, Pa., is coming rapidly to the front in fire brick manufacture; the three yards located at that point are doing an enormous business this summer, and especially so in the finer grades. The Freeman plant of the American at Freeman's Station is having a most successful run this summer, with a few added improvements. Nearly all of the Mack Manufacturing Company's plants at New Cumberland are in operation, but this company had enormous quantities stacked, which they are rapidly depleting with big shipments. Paving brick is their main trade. The Black Horse plant of the American at New Cumberland, and the West Virginia Fire Clay Company, of the same place, are doing a fairly good trade this summer. The latter company always does a fine business in ground clays, of which they make a specialty. Prices have been pretty well maintained thus far this summer.

Since the signing of the agreement by nearly all of the sewer pipe firms of the United States last winter, which might be said is the National Association of Sewer Pipe Manufacturers, prices have been pretty thoroughly maintained in the sewer pipe world. The independents have done much to make this possible, and price cutting has not been so rampant as in former years. Sewer pipe manufacturers, however, are constantly branching out toward the west and south, the latest venture being away down in the state of Georgia. As is usual, skilled labor from this portion of the country is always called for, and Timothy Manion, formerly foreman of the Markle, East Ohio and East End, East Liverpool plants, has accepted the superintendency of the new plant, and will call upon a number of skilled workmen from this and other towns along the valley to fill positions under him. Mr. Manion is one of the best sewer pipe makers in the business, and deserves every success attained. That the trade is prosperous can be judged from the unusually large shipments from every yard along the valley, which are perhaps even greater than in previous years. Work on the Stratton Fire Clay Co.'s new No. 3 plant at Empire, is progressing rapidly. Three mammoth kilns are now under construction, and the frame work for the big main building is nearly all in place. A large force of carpenters and laborers are engaged in the work. Repairs are in progress at the Sligo plant of the Mack Manufacturing Company, at Penrith, looking to a resumption shortly. The Clifton works of the same company at New Cumberland, are now in full operation. Nearly all of the American Sewer Pipe Company's plants throughout their entire regime, some 25 or 30, are either in full operation or partially so, but shipments are steadily maintained from some of those which have been shut down for a year or more. The prospects are that the trade will continue active throughout the entire summer, which augurs much for the prosperity of this particular portion of the Ohio Valley.

For a number of years the invention of labor-saving machinery was quite a feature among the different plants, and some of the ideas evolved by the workmen themselves resulted in wonderfully increasing the output and capacity of many of the plants. Of later years these have not been followed up to any great extent, outside of bettering the mining facilities and making matters easier for handling and grinding the crude clays. This may be due to some extent to many of the skilled inventive workmen being called to other parts of the country to accept more lucrative positions in the way of foremanships and superintendencies. In this regard there has perhaps not been a single new sewer pipe or fire brick venture in the whole country projected, that the workmen of this section of the valley have not in some measure been called upon to secure its successful operation or completion.

The Ohio Valley plants of the American Sewer Pipe Co. have been particularly favored since that company inaugurated its policy of concentrating the manufacture of sewer pipe to those plants where the product could be more readily and rapidly turned out in quantity. Also due somewhat to the mining of clay and coal. Therefore, their plants possessing these facilities have been highly favored, and the product stands the highest in the sewer pipe world. We do not make the claim for Toronto alone, but it has been a matter of record and tests for years that the Ohio Valley clays, both in the manufacture of sewer pipe and fire brick, are undoubtedly superior to those in any other part of the country. It is true the American has dismantled a number of undesirable plants in this section, but they have also wonderfully increased the capacity of those remaining, and are still seeking to maintain this prestige in the future by the purchase of clay lands that will afford them an ample supply of the mineral for quite a number of years in the future.

RED RIVER BRICK CORPORATION TURNING OUT 200,000 BRICK DAILY.

The Red River Brick corporation, Grand Forks, N. Dak., is now manufacturing in its four yards approximately 200,000 brick each day. The demand for brick is brisk at this season, but the corporation expects to carry over until next season about 6,000,000 brick, nearly double the number carried over from last season. These will be used to supply the usual heavy demand early in the season. The corporation is shipping large quantities of brick to Winnipeg.

MAKING BRICK OF FINE QUALITY OUT OF REFUSE SLATE.

In York County, Pennsylvania, one of the southern tiers of counties in this great clay-producing state, is a plant well worth the mention for several of its peculiarities. This plant is located at a little village of only a few hundred inhabitants called Stony Brook, about five miles east of the city of York, the county seat.

A company owned a slate quarry and were at a loss to know what to do with the refuse slate which was piling up in large quantities and only a great expense to get rid of. After making several tests of this refuse slate it was found that a very superior dry pressed brick could be made from it; therefore they could not only get slate from their quarry but could use the waste for making a first class brick, so the Stony Brook Brick and Slate Company was formed with a reasonable working capital and a dry press brick plant put in. The equipment consisted first of a four-mold Boyd special dry press and outfit of clay preparing machinery, but later this was added to so that now they have the above outfit, also a two-mold Boyd press, '97 model. Two mortise dry pans, elevators, screens and mixers. So that they can make standard Roman and ornamental brick. The slate is crushed in the Martin dry press and elevated and screened in the usual manner, and a fine red face brick is the result. The power capacity is a 100 horsepower engine and boiler.

At present the kiln capacity is only four thirty foot round down-draft kilns. They are what are known as the Goldner patent kilns and are designed and patented by G. E. Goldner, who is the superintendent of the plant. Four more kilns of the same pattern are now under construction.

Another very pleasant and profitable feature is the stock room; it has a floor 40x170 feet in size, this is on a level with a car floor, making the filling or loading of the cars very easy, which is quite an item, as all of the goods have to be shipped. All the buildings are well built as you can see by the illustration. The slate quarry is about a mile distant and a 36-inch gage railway for the hauling of the refuse slate to the plant is now being constructed.

The officers of the company are T. Frank Bayer, president, who lives at Huntingdon, Pa.; M. N. Isenberg, of the same place, secretary; Captain J. W. Minnich, of Wrightsville, general manager and treasurer, and G. E. Goldner, 747 South Queen street, York, Pa., the superintendent. These gentlemen are all business men of the highest character and are to be congratulated upon having such a fine plant to work up their refuse and make the by-product become more valuable than the original industry.

Brick Plant of the Stony Brook Brick & Slate Company, Stony Brook, Pa.

VEEDERSBURG PLANT TO MANUFACTURE HIGH QUALITY OF BUILDING BRICK.

The Veedersburg (Ind.) Clay Company has been reorganized by the election of Clint Marshall, president, and Walter Marshall, secretary and treasurer. The company was organized in the summer of 1902 for the manufacture of paving brick, and last season eight kilns were built. The company, however, did not prove to be profitable and the plant was closed, but will be reopened as soon as possible.

The original plan to manufacture paving brick will be abandoned and the new company will turn its attention to the working of buff, light gray, mottled and dark glazed front building brick. The new company, which is capitalized at $100,000, has strong financial support. The plant has the most modern machinery. Its capacity at present is 40,000 brick a day, while the capacity of the machinery can be increased to 1,000,000. A new 90-foot shaft is being sunk and the plant will mine its own coal, shale and clay. The company hopes to be able to place its new product on the market within thirty days.

CLAY PRODUCTS OF THE UNITED STATES FOR 1904.

STATE.	RANK OF STATE.	COMMON BRICK.			VITRIFIED PAVING BRICK.			FRONT BRICK.			FANCY OR ORNAMENTAL BRICK. (Value.)	DRAINTILE. (Value.)	SEWER PIPE. (Value.)	ARCHITECTURAL TERRA COTTA. (Value.)	FIREPROOFING. (Value.)	HOLLOW BUILDING TILE OR BLOCKS. (Value.)	TILE, (NOT DRAIN). (Value.)	FIRE BRICK.			MISCELLANEOUS. a (Value.)	TOTAL BRICK AND TILE. (Value.)	POTTERY. (Value.)	GRAND TOTAL. (Value.)	STATE.
		Quantity. (Thousands.)	Value.	Average price per thousand.	Quantity. (Thousands.)	Value.	Average price per thousand.	Quantity. (Thousands.)	Value.	Average price per thousand.								Quantity. (Thousands.)	Value.	Average price per thousand.					
Alabama	22	150,170	$840,238	$5.80	(b)	(b)	$13.87	430	$4,450	$10.35	(b)	(b)	(b)					8,596	$140,678	$18.37	$10,000	$1,257.015	$32,533	$1,288,548	Alabama
Arizona	48	8,507	88,885	7.25																		68,885		68,885	Arizona.
Arkansas	31	83,798	681,857	7.05				(b)	(b)	12.00		$1.675						671	10,800	16.10		675,332	21,250	686.582	Arkansas.
California	8	258,898	1,843,936	7.18	(b)	(b)	18.08	11,722	291,813	24.89	$27,037	29,440	$588.626	$221,000	$51,125	$45,751	(b)	12.534	285,718	22.80	112,720	3,553.016	71,718	3,624,734	California.
Colorado	25	85,220	544,661	6.39	(b)	(b)	9.87	18,827	214,498	11.38	3.248	4.704	(b)		(b)	(b)	(b)	4.606	110.053	23.89	45,000	1.153,921	35,370	1,189,291	Colorado.
Conn. and Rhode Island	23	188,908	1,039,204	5.58	(b)	(b)	14.00	3,060	45,730	14.94	(b)						(b)	1.849	43,500	23.53		1,146.034	c 69,575	1.215,608	Conn. and Rhode Island.
Delaware	42	18,656	152,478	8.17				(b)	(b)	14.71		(b)										158,970		158,870	Delaware.
District of Columbia	38	28,913	194,695	7.23				(b)	(b)	15.12		3,600	44,000		(b)						8,770	296,443	10,017	808,460	District of Columbia.
Florida	40	44,484	248,579	5.59								(b)						(b)	(b)	14.08		252,864		252,884	Florida.
Georgia	12	269,815	1,374,318	5.09	(b)	(b)	12.00	3.924	42,084	10.72	(b)	8,099	165,068	(b)	(b)		(b)	3,460	28,100	8.12	9,069	1,898.878	22.057	1,920,936	Georgia.
Idaho	41	20,865	160,102	7.75	(b)	(b)	25.00	(b)	(b)	20.51								(b)	(b)	28.85		173,597		173,587	Idaho.
Illinois	4	898,310	5,187,165	5.17	121,073	$1,234,703	10.20	21,299	251,762	11.82	11,733	1,002,453	550,344	(b)	324,264	8,460	$194,471	16,916	217.008	12.83	41,572	9.947,751	829,696	10,777.447	Illinois.
Indiana	8	283,707	1,877,714	5.91	51,859	513,209	8.90	19,880	197,890	9.95	(b)	1,205,717	294.000	(b)	210,800	219.476	(b)	11,260	130,216	11.56	254,681	5.198,898	703,691	8,902.589	Indiana.
Indian Territory	38	34,730	217,338	6.26	(b)	(b)	7.44	1,888	22,017	11.66								254	4,475	17.62	23,756	268,926		268,928	Indian Territory.
Iowa	9	207,041	1,440,758	6.96	19,231	199,528	10.38	7.994	91,269	11.42	(b)	1.294.134	(b)			161,658	4.300	(b)	(b)	15.00	105,000	3.392,719	68,134	3.460,853	Iowa.
Kansas	14	202,821	890,474	4.39	81,441	621.424	7.63	18,959	129,576	7.64	(b)	10,883	(b)			(b)	(b)	385	4,375	11.38	45,581	1.843,630	(b)	1,843.630	Kansas.
Kentucky	10	138,677	798,074	5.74	(b)	(b)	14.91	2,178	20,571	8.44		26,564	(b)		(b)		(b)	40,948	680,084	16.61		1,929,664	157,813	2,087.277	Kentucky.
Louisiana	27	145,259	914,585	6.29	(b)	(b)	10.07	5,180	54,534	10.53		(b)									31,400	1,009,274	2,204	1,011,478	Louisiana.
Maine	32	50,499	326,240	6.46	(b)	(b)	15.02	733	8,950	9.48		2,944	(b)					(b)	(b)	15.04		558,361	(b)	558,381	Maine.
Maryland	13	160,279	1,048,850	6.54	(b)	(b)	10.08	2,245	37,537	16.72	(b)	2,848		(b)			(b)	11,084	235,136	21.21	33,612	1.469,126	402,831	1,872,057	Maryland.
Massachusetts	16	185,435	1,012,226	6.12	(b)	(b)	14.00	(b)	(b)	21.87	(b)			(b)	(b)		72,000	(b)	(b)	20.83	195,773	1.440,743	288,315	1,729.058	Massachusetts.
Michigan	17	205,196	1,118,714	5.44	(b)	(b)	13.28	1,080	7,500	6.94	(b)	208,088	(b)			8,080		(b)	(b)	13.00		1,870,892	43,621	1,714.513	Michigan.
Minnesota	21	184,154	970,247	5.91	(b)	(b)	10.00	6,566	113,260	17.25	(b)	11,100	(b)		(b)	(b)						1,319.907	(b)	1,318,907	Minnesota.
Mississippi	29	110,183	710,878	6.45				(b)	(b)	10.73		3.638				(b)						760,793	14,701	775,494	Mississippi.
Missouri	7	271,370	1,690,480	6.23	47,235	480,671	10.17	25.599	322,445	12.60	32,967	80,479	1,176.679	(b)	(b)	(b)	(b)	48,607	925,520	19.04	342,327	5,410,686	70,818	5,481,504	Missouri.
Montana	37	18,176	145,642	8.01	(b)	(b)	16.00	136	2,598	19.10	(b)	(b)	(b)		(b)	(b)		1,797	102,611	57.10	1,480	279,431	(b)	278.431	Montana.
Nebraska	28	133.074	904,750	6.80	5,531	45,063	8.15	7.107	106,572	15.00	(b)										3,502	1,067,387		1,067,387	Nebraska.
Nevada	49	2,800	25,100	8.98				(b)	(b)	18.00												25,820		25,820	Nevada.
New Hampshire	33	70,290	446,603	6.35				(b)	(b)	10.80								(b)	(b)	27.24		479,985	(b)	478,985	New Hampshire.
New Jersey	3	319,975	1,842,075	5.78	4,953	68.813	13.49	47,058	687,469	14.61	(b)	24.842	23,299	1,412,023	947,253	264,393	548,097	39,752	908,882	22.88	418,745	7,354,294	5,949,753	13,304,047	New Jersey.
New Mexico	44	11,694	78,927	8.83	(b)	(b)	10.00	(b)	(b)	12.22												108,764		108,764	New Mexico.
New York	5	1,169,233	8,763.528	5.80	14,490	189.281	13.06	19,104	263,150	13.77	(b)	139,876	125.510	785,978	132,034	24,050	154,417	19,792	381,784	19.29	248,224	9.228,432	1,314.638	10,543,070	New York.
North Carolina	28	137,453	760,181	5.53	430	3,850	8.95	605	6,300	10.41	(b)	800	(b)					174	2,778	15.97		883,964	14,000	897,964	North Carolina.
North Dakota	43	17,390	134.017	7.71				(b)	(b)	18.07	(b)	(b)			(b)			(b)	(b)	34.53		147,579		147,578	North Dakota.
Ohio	1	455,936	2,708.456	5.94	218,791	2,222,931	10.16	65,645	755,870	11.51	64,514	1,143,957	3,495,917		476,276	312,549	1,005,811	79,939	1,186,966	14.85	581,545	13,978,485	11.869,298	25,647,783	Ohio.
Oklahoma	39	33,813	233,280	8.90	(b)	(b)	7.00	1.300	12.700	9.77								(b)	(b)	20.00	11,618	282,088		262,098	Oklahoma.
Oregon	34	40,217	302,098	7.51				1.350	21,750	16.11	(b)	21,553	(b)		(b)	(b)		49	1,599	32.63	300	446,340	(b)	448,340	Oregon.
Pennsylvania	2	856,963	5,439,116	6.35	71,522	766,638	10.72	75,407	962,765	12.77	23,317	8,646	834,846	149,317	139,036	54.154	215,107	275,582	8,477,475	19.88	1,042,282	15,421,981	1,399,882	18,821,863	Pennsylvania.
South Carolina	30	131,198	665,688	5.07				910	13,200	14.51	(b)	(b)						3,377	36,960	10.94		716,458	15,575	732,033	South Carolina.
South Dakota	47	7,255	59.603	8.22												(b)		(b)	(b)	20.00		63,203		63,203	South Dakota.
Tennessee	19	158,223	946.131	5.98	(b)	(b)	11.80	8,332	80.906	9.71	29,316	12,350	(b)		(b)			4.390	53,185	12.12		1,284,201	151,584	1,435,785	Tennessee.
Texas	18	197,033	1,157,130	5.87	(b)	(b)	8.81	5.645	58,734	10.40	2,544	(b)	(b)			(b)	(b)	1,882	30,208	15.24	68,593	1,429,596	108.501	1,538,097	Texas.
Utah	35	40,128	255,358	6.36	(b)	(b)	9.00	8,940	92,902	10.39	(b)	(b)	(b)					(b)	(b)	13.60	6,565	419,728	(b)	419,728	Utah.
Vermont	45	13.102	78,237	5.97								(b)									20,000	100,153	(b)	100,153	Vermont
Virginia	15	203,484	1,292,558	6.35	(b)	(b)	10.48	21,077	344,891	16.36	28,576	5,673						1,371	24,306	17.73		1.708,728	27,864	1,738,382	Virginia.
Washington	24	87,732	665,878	7.59	9,233	149,559	16.20	3,999	81,142	20.29	(b)	8,812	215,282	(b)		(b)		711	22,445	31.57	9,767	1,178,918	22,000	1,200,918	Washington.
West Virginia	11	68.133	469,501	6.89	39,620	470,339	11.87	388	5,380	13.87		1,398	(b)	(b)			(b)	896	11,814	13.19		1,009,344	1,065,205	2.074.848	West Virginia.
Wisconsin	20	186.292	1,230,620	6.61				8.438	88,688	10.27	(b)	54,831				(b)					1.400	1,377,918	13,075	1,390.994	Wisconsin.
Wyoming	48	3,881	34,635	8.92				(b)	(b)	15.00	(b)											35,845		35,845	Wyoming.
Other States d					50.080	593.416	11.85	9,336	123.248	13.20	76,881	29.441	1.694,052	1,339,155	221,815	28,927	829.425	8,768	111.296	16.44		(f)	g 584.851	g 584,851	Other States.d
United States		8,665,171	51,768,558	5.97	735,489	7,557,425	10.28	434.351	5,560,131	12.80	e 845,630	5,348,555	9,187.423	4.107,473	2,502,603	1,126,498	3,023,428	897,760	11,167,972	18.68	3,869.282	105,864,978	25,158,270	131,023,248	United States.
Per cent of total			39.51			5.77			4.24		.65	4.08	7.01	3.14	1.91	.88	2.31		8.52		2.80	80.80	18.20	100.00	Per cent of total.
Total, 1903		8,463.683	$50,532.075	$5.97	654.499	$6.453,849	$9.86	433,016	$5,402,861	$12.48	h $898,078	$4.639.214	$8,525,369	$4,672,028	$2,708,143	$1,153,200	$3,505,329	(i)	$14,062,369		$3,073,858	$105,626,369	$25,463,052	$131,062,421	Total, 1903.

a Including adobes, aquarium ornaments. assayers' furnaces, boiler and locomotive tile and tank blocks, brick for chemical purposes; burnt-clay ballast, carboy stoppers, chimney radial brick, pipes, tops, and thimbles; clay furnaces, retorts, and settings; conduit work, crucibles, flue linings, foundation blocks, gas logs, glass-house supplies, grave and lot markers, hollow chimney blocks, insulators, muffles, oven tiles, paving blocks, runner brick, sleeves, and nozzles, rustic stumps, saggars, scorifiers, sewer brick, stone pumps, tunnel blocks, and wall coping.

b Included in "Other States."

c Produced by Connecticut alone.

d Includes all products made by less than three producers in one State, in order that the operations of individual establishments may not be disclosed.

e Including enameled brick valued at $545,397, made in the following States: California, Colorado, Illinois, Maryland, Missouri, New Jersey, Ohio, and Pennsylvania.

f The total of "Other States" is distributed among the States to which it belongs, in order that they may be fully represented in the totals.

g Includes pottery products which could not be separately classified without disclosing the operations of individual establishments.

h Including enameled brick valued at $569,689, made in the following States: California, Illinois, Maryland, Missouri, New Jersey, Ohio, and Pennsylvania.

i Quantity of fire brick not collected in 1903.

JEFFERSON MIDDLETON, *Statistician*.

PACKING AND ITS USES.

Some of the most common packings are: India rubber, hemp, asbestos, leather, paper, cotton, lead, wire and copper wire, ply and water packing. There may be many more but I do not know of them.

There are many other materials used in combinations, such as oil, red, white and black lead, and chalk tallow. There are also many varieties of sheet rubber packing, thick and thin, with and without cloth, such as gaskets, for man and handholes for boilers, water gages and some unions in pipes.

With cloth some are two-ply or more, some have cloth on the outside and some with rubber on the outside. These are used for a great many different purposes—to pack steam-chest covers, cylinderheads, unions for engine joints; in fact, are used on any flat surface.

Good judgment should be used in regard to the thickness of the packing and tightening of the joint. One man may pack a flange union and to all appearances do it properly and it will leak, another man will pack it and it will not leak a drop.

I was once told that the flange that connected the pipe to the boiler should be packed once a month. I replied that it could be packed so it would not need to be packed again unless taken apart or broken by some unfair means. He made me the offer of a box of cigars if I would pack his so that it would last a year. I accepted the offer and was called in at night when the steam was down, to do the job. I commenced by taking it apart and cleaned the place where the flange rested and also cleaned the flange. It called for a piece about 10 inches in diameter. They gave me a piece of three-ply about one-eighth of an inch thick. Then cutting the gasket I put it in place, then hunted around the establishment until I found a piece of soft brass wire about 3-32-inch in diameter and bent it into the form of a circle to fit on the inside of the bolts. Then placed the flange in position and bolted it down as tight as possible. They fired up the boiler and as the boiler and joints heated up I tightened bolts as the packing softened until they could be tightened no more. It was used for several years and did not require a new gasket.

Rubber used in a place of that kind vulcanizes and becomes almost as hard as the iron itself. The wire holds the packing in place and should the flange be rough or if there is any imperfection in it it keeps it from leaking. The bolts help to hold it in place. Some think that the ends of the wire should be soldered.

In many cases thick rubber is used where thin rubber would answer every purpose and make a better job of it.

There are also square rubber packings made in alternate layers of rubber and cloth. They are generally used to pack the water pistons on steam pumps. They are cut diagonally and a trifle short to form a ring, and make a very efficient packing for the above mentioned purpose.

Hemp is used largely to pack piston and valve-rods, also pump-plungers, and globes and anglevalves. For small valves and piston-rods it should be braided. For larger ones from rings cut from coils of hemp. It makes the very best packing for globe and angular valves.

Asbestos is made in a number of forms and sheet asbestos is used on smooth surfaces. The rope or square form is used for piston and valve-rods to some extent, but is not generally considered as good as rubber ring or hemp.

Leather is used to pack pistons which pump cold water or sand or gritty water. It has a great many good points. It makes a light piston and is less destructive to the pump cylinder.

Paper is used in both thick and thin forms. Thin tough paper makes good packing for smooth surfaces. Thick paper is sometimes used for man and handholes to boilers, also on large flange unions.

Cotton wicking is used for many of the same purposes for which hemp is used, but is not as good. It is generally used in new valves when rough. I do not think it is used for durability but for convenience. There are a great many who have formed a habit of using it because it is easy to get and they use it without thinking.

Lead and copper wire were used when there was a groove in one surface. Canvas was used to a large extent in former years, but paper and rubber have taken its place now.

Piston spring packing is used to make the piston steam tight in the cylinder.

Most usually these are made of cast iron split ring set breaking joints and springing into the groove in the spider. Those rings are kept out either by their own elasticity, the steam pressure in the cylinder or springs within the spider.

Then there is what is called water packing. It is a solid piston in the cylinder for pumping cold water. I have seen but two of these, one in a boiler pump, and three in the pumps of a double acting pump for a steam fire engine. The piston fitted so that it moved easily. It was 4 inches in diameter, the length was the same with grooves around it ¼-inch deep by ¼-inch wide. The space between the grooves was ¼-inch wide. It worked well but did not have much lift, and if I remember rightly, it did not lose its priming.

There are other combined materials used to pack a hand or manhole. To do this properly make a braid of hemp in the form of the plate and black lead both sides, and when it is taken out it can be removed without injury. It is a good thing to give a rubber gasket the same treatment on account of the amount of sulphur it contains, which has a tendency to corrode the iron.

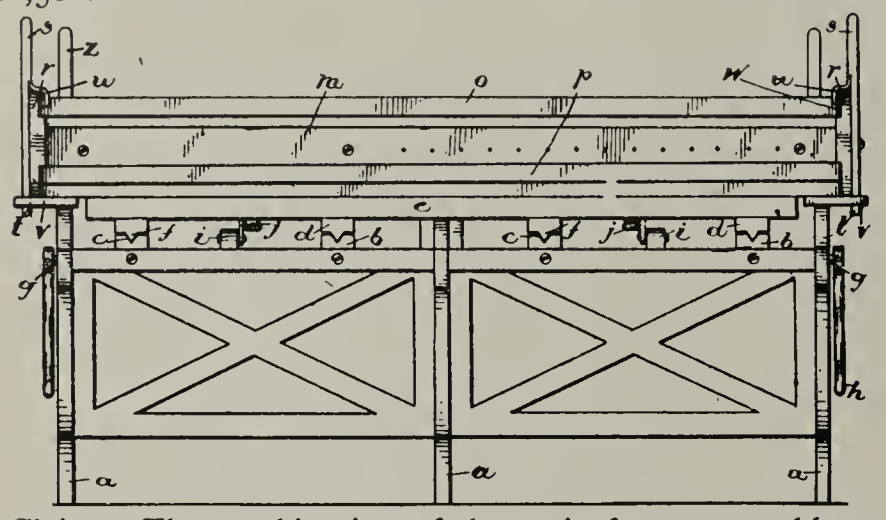
In case you haven't a rubber ring for the top of your water glass use asbestos wicking slightly tallowed, and for the bottom use asbestos and candle wicking; if you have neither and you have some thin rubber packing cut a strip a little narrower than the depth of the gland. Wind enough around it to fill the gland, put it in place and screw it down, warm it up with the steam and screw it down again and you will have a rubber ring in the gland. I once knew a man who packed the flange of a blowoff pipe, where it joined the boiler, with sheet lead. He was advised not to do it, but paid no attention to the advice. About a year after when he was firing up one morning the boiler began to leak and leaked until it put the fire out and was empty. Being asked what was the cause, I explained it in this way: The scale and sediment had gathered in the pipe and bottom of the boiler so that no water came in contact with the shell of the boiler or lead, so that it became heated and ran out, leaving an opening and allowing the water to run out. A good rubber gasket was then put in and they had no more trouble with it.

It is not the man that has a good supply of different kinds of packing, who has to figure, but the man that can use what he has and keep things moving, that gets best results.

NEW INVENTIONS THAT ARE OF INTEREST TO THE CLAY MANUFACTURER.

These new inventions are those that are especially of interest to anyone engaged in the line of building materials and their manufacture, or machinery to make them:

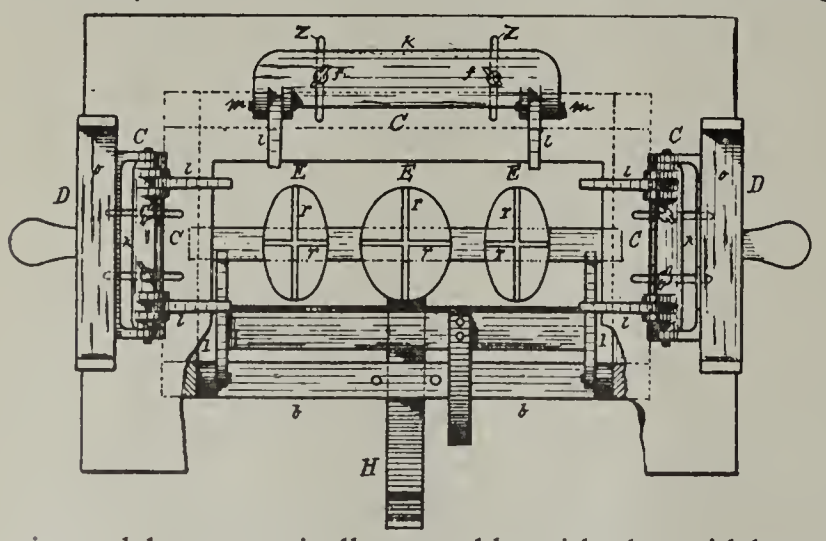
792,044. Molding-Machine.—Charles H. Hutchings, Toronto, Canada, assignor of two-thirds to Philip W. Stanhope, Toronto, Ontario, Canada. Filed June 7, 1904. Serial No. 211,562.



Claim.—The combination of the main frame, a mold consisting of a fixed bottom and side articulatingly connected to the main frame and arranged to be maintained in an upright position to receive the material for the block and to be overturned to deliver the molded block, a removable side detachably connected to the bottom opposite the fixed side, rotatable end sides for the mold, means for locking the end sides and the removable and fixed sides together, a carriage to receive the removable side with the molded contents when the mold has been overturned and means for actuating the carriage.

792,478. Molding-Machine for Concrete Building-Blocks. Lewis V. Thayer, Minneapolis, Minn. Filed Nov. 3, 1904. Serial No. 231,305.

Claim—In a molding-machine of the character herein shown and described, the combination with the frame, of hinges adjustably affixed to the said frame; side and end pieces loosely affixed to and removable from the said hinges,

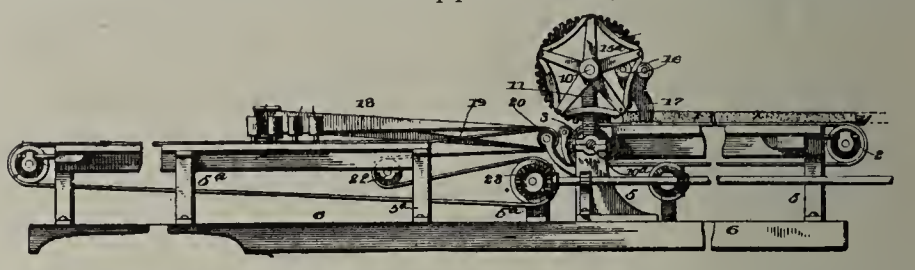


a horizontal beam vertically movable with the said beam; a treadle pivotally affixed to the said frame, a connecting-rod uniting the said horizontal beam and the said pedal; and pawls adapted to support the said horizontal beam in its uppermost position, all substantially as shown and described.

792,941. Brick-Cutting Apparatus. Clarence M. Steele and Alexis P. Steele, Statesville, N. C. Filed Dec. 20, 1904. Serial No. 237,627.

Claim.—In a brick-cutting apparatus of the class described the combination, with means for carrying the clay bar, of a rotating cutting-reel, a frame supporting the same and adapted to swing in a vertical plane; a cam also supported in said frame and adapted to swing therewith, and a fixed part or device with which said cam works in contact, and means for imparting rotation to both the reel and cam, substantially as shown and described.

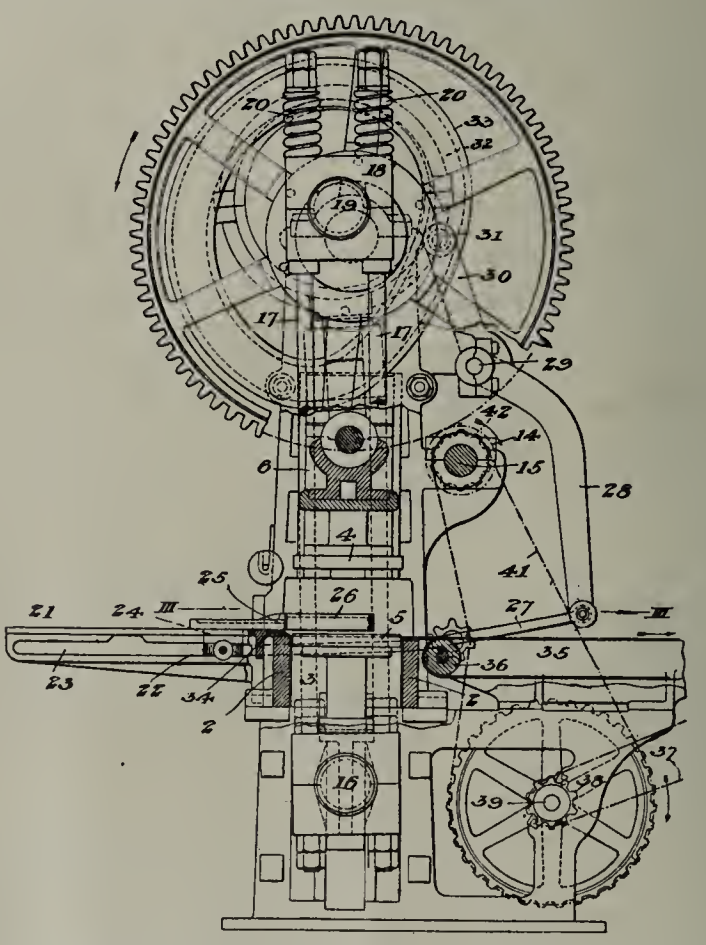
The combination, with the cutting mechanism, of the two endless horizontal belts 18 and 19 running on the adjacent pulleys at the same speed, the belt 19 being arranged flat and the belt 18 twisted from the horizontal at the receiving-point to the vertical at the opposite end, and the horizontal



feed-belt 1 having its delivering end opposite adjacent portions of the two belts 18 and 19, so that a brick length is delivered partly upon one and partly upon the other, and gradually turned from the twisted belt onto the flat belt, as specified.

792,999. Brick Re-Pressing Apparatus. John O. Ludlam and Charles F. Bonnot, Canton, Ohio, assignors to The Bonnot Company, Canton, Ohio, a Corporation of Ohio. Filed July 27, 1904. Serial No. 218,346.

Claim.—In brick-pressing apparatus a mold having opposite open ends, plungers movable within said ends, and means for reciprocating the plungers simultaneously at different rates of speed and in the same direction during the pressing operation; substantially as described.



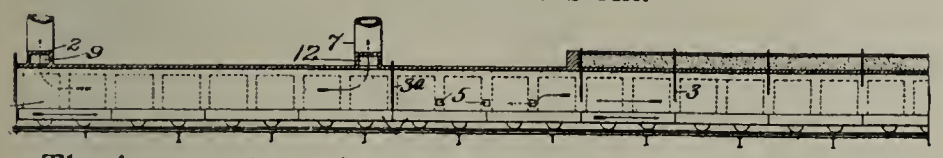
In brick-pressing apparatus, a mold having open ends, opposite plungers movable through said upper end, one of said plungers being movable through a short stroke beyond the end of the mold; above that part of the mold the brick travels over during its motion off the plunger, and mechanism for moving the bricks from said plunger during the said short movement beyond the mold end; substantially as described.

793,291. Method of Burning Brick, etc. Albert A. Gery, Reading, Pa. Filed Oct. 26, 1904. Serial No. 230,001.

Claim.—The improvement in the method of burning brick and the like *en route* through a tunnel-kiln, which consists in partially charging the kiln with abutted cars of unburned brick, creating a reverse air-current therethrough, heating the incoming air and combining the same with products of

combustion before it comes in contact with the advance brick to thereby heat said advance brick to incandescence, supplying fuel to the brick thus heated and maintaining combustion thereof by said air-current, progressing the brick-train and thereafter utilizing the heat of the burned brick to heat the incoming air-current.

The improved continuous method of drying and burning brick and the like *en route* through a tunnel-like kiln which consists in creating a reverse current therethrough, heating said current within the tunnel, utilizing said heated current for heating the incoming wet brick without contact thereof with said brick, and separately withdrawing the moisture-laden air in contact with said brick.

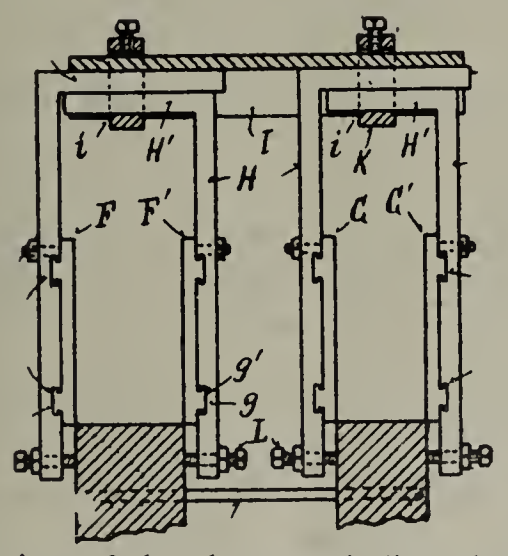


The improved continuous method of drying and burning brick and the like in a tunnel-like kiln which consists in burning the brick in the inner tunnel by direct contact with the products of combustion and initially drying the incoming brick by indirect contact with said products of combustion.

The improved continuous method of drying and burning brick and the like, which consists in passing the brick to be treated through a tunnel, providing fuel in the interior of the tunnel at an intermediate point thereof, and passing air from the exit end of said tunnel continuously rearward through said fuel and through a contiguous passage extending to the entrance end of the tunnel to indirectly heat the incoming brick.

792,289. Mechanism for Constructing Concrete Walls. William H. Pugh, Cincinnati, Ohio. Filed Feb. 23, 1905. Serial No. 246,983.

Claim.—In a mechanism of the character indicated, a series of uprights having horizontal arms, channel-frames supporting said horizontal arms, yokes to clamp the arms in the channel-recesses, and mold-plates supported upon said uprights.

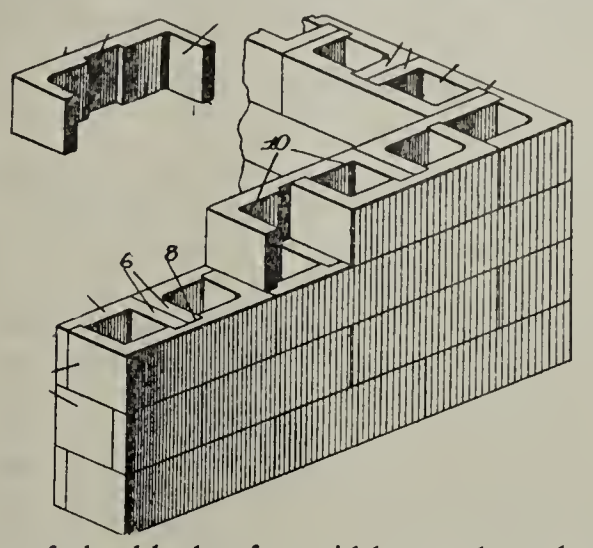


In a mechanism of the character indicated, an angle-plate pivot-posts adjustable relative thereto, plates hinged to said pivot-posts and provided at their free ends with interengaging fingers, means for locking said fingers to varying angles of adjustment, and a brace connecting the said posts.

793,591. Building-Block and Wall. Frank E. Kidder, Denver, Colo., assignor to John A. Ferguson, Denver, Colo. Filed June 23, 1904. Serial No. 162,805.

Claim.—A building-block comprising a body portion provided with terminal projections, the inner walls of which are unobstructed and extend laterally at right angles to the inner unobstructed vertical face of the block, there being a transverse groove or recess formed in the inner vertical face of the block intermediate said projections, the sides of the groove being disposed parallel with the inner walls of the lateral projections.

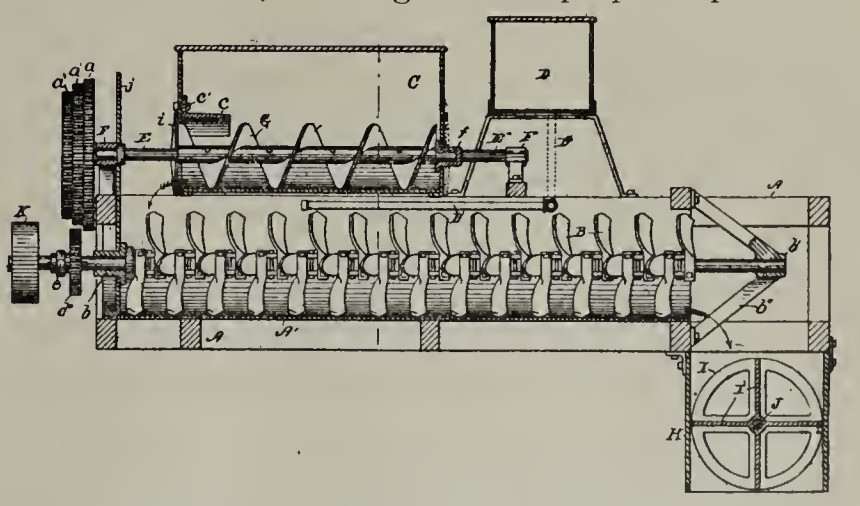
A building-block comprising a body portion provided with terminal projections of the same height as the block and having their inner walls extended laterally at right angles to the inner vertical face of said block, there being a transverse groove or recess formed in the central portion of the inner



vertical face of the block of a width equal to the combined width of the lateral projections, the sides of the groove being disposed parallel with the straight inner walls of said projections.

793,059. Mixing-Machine for Concrete or Like Materials. Henry D. Conway, Jackson, Mich. Filed April 30, 1903. Serial No. 159,949.

Claim.—In a machine for mixing concrete and the like, the combination of a mixing-trough; a shaft arranged therein; mixing-arms spirally arranged on said shaft so that the forward edge of each of said arms projects beyond the plane of the rear edge of the next preceding arm; sand and cement hoppers with discharge-openings arranged to deliver on the same transverse line to the forward end of said mixing trough; a hopper for coarse material with discharge-opening arranged to deliver to the said mixing-trough at a point at a considerable distance from the forward end; force-feed devices for said hoppers; and a spray device arranged to deliver a spray of water onto the coarse material and onto the sand and cement in advance of the point of delivery of the coarse material, coacting for the purpose specified.



In a machine for mixing concrete and the like, the combination of a mixing-trough; an agitator arranged to mix the material and convey the same toward the rear end of the trough; sand and cement hoppers with discharge-openings arranged to deliver on the same transverse line to the forward end of said mixing-trough; a hopper for coarse material with discharge-opening arranged to deliver to said mixing-trough at a considerable distance from the forward end; a spray device arranged to deliver a spray of water onto the coarse material and onto the sand and cement in advance of the point of delivery of the coarse materials; spiral conveyers for the said hoppers, and means for driving said conveyers at varying relative speeds, whereby the quantity of material delivered by it is determined, for the purpose specified.

CLAY RECORD.

PUBLISHED SEMI-MONTHLY BY THE

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GEORGE H. HARTWELL, Editor.

SUBSCRIPTIONS.

Send One Dollar bill or stamps for United States, Canada or Mexico and one dollar fifty cents for all other foreign countries.

Papers are not stopped at the end of subscriptions unless the subscribers order them so and pay up the arrearages.

ENTERED AT THE CHICAGO POST OFFICE AS SECOND-CLASS MATTER.

Vol. XXVII. JULY 31, 1905. No. 2

"I like to read American advertisements. They are in themselves literature, and I can gauge the prosperity of the country by their very appearance."—William E. Gladstone.

When times are dull and people are not advertising is the very time that advertising should be the heaviest. Ninety-nine out of every hundred merchants advertise most when there is least need of it, instead of looking upon advertising as the panacea for their business ills.—John Wanamaker.

There is nothing so painful as some men's efforts to be funny.

Opportunities are like apples: If you pick them too soon they are green, and if you wait too long they are rotten.

Successful men have plenty of confidence in themselves and but little in the mule's heels, a woman's tongue or one of your business enemies.

THE CLAY RECORD is the only clay journal in America that is printed twice per month. Subscription price one dollar per year. Can you afford to go along and not know what is going on?

Vigilance in watching opportunity; tact and daring in seizing opportunity; force and persistence in crowding opportunity to its utmost possible achievement—these are the martial virtues which command success.

We cannot refrain from referring again to the immigration question. What will be the effect of a million or more added to our population each year of the character and kind now coming to us on the well-being and prosperity of this country?

There is no denying the fact that the percentage from the more undesirable sections of Europe has been increasing to a dangerous degree. A large proportion of whom are illiterate, and in other ways undesirable. The means and methods employed by the steamship companies are most objectionable.

The great and peculiar danger to this country lies in the fact that these undesirable and illiterate from southern and southeastern Europe are becoming more and more congested in the great cities along the Atlantic seaboard. Forming communities by themselves, and are segregated in tenements and districts to such an extent as to put them beyond all the influences that might otherwise enable them to become assimilated.

Congress should act upon this matter at once, and it is to be hoped the Commissioner of Immigration will in his next report so emphasize conditions that immediate action shall be taken to correct the evil.

After a struggle lasting over one hundred days, the sacrificing of a dozen lives, injuring scores, reducing many families to want, the loss of hundreds of thousands of dollars, the teamsters' strike in this city is practically ended.

Notwithstanding close observation and careful study of the incidents of this strike there was not one which did in any respect affect the opinion we have held regarding strikes and which has been expressed many times in these columns. We still insist that the strike is unnecessary, our contention being that, while recognizing differences will arise requiring adjustment and should be adjusted, it is always possible to submit these differences to arbitration, and adjust them to the reasonable satisfaction of all parties concerned, and more, we insist there should be moral and legal influences requiring and compelling arbitration. This view of the subject has been intensified by certain facts developed during the strike. We refer to the use of "graft" by certain employers with union leaders to bring about strikes involving competitors; the willingness of some of the union leaders for a consideration to call off certain strikes the calling of which was apparently for no other reason than to make a stake. These undoubted cases forces the question: In how many cases in the past, has "graft" been the inspiration of and responsible for the strikes in the past?

It is now believed that it was this contemptible motive and not the distresses of the laboring men requiring amelioration that has been responsible for the unsettled labor conditions of recent years. It is high time that public sentiment should be aroused and to that pitch when it shall demand and compel the submission to arbitration all differences arising between employer and employee. In the nature of things differences are expected to arise, but it is possible to adjust them in a common sense way to the satisfaction of all concerned, and where there is a genuine grievance it may be easily corrected.

ACCIDENTS, DAMAGES AND LOSSES.

William Pender, on employe of the Acme Brick Works, Cayuga, Ind., has sued the company for $10,000 damages. He was injured by an accident.

A serious cutting affair occurred at the Jefferson City (Mo.) Brick Works, between two of the workmen which got into a dispute as to which could mold the most brick.

Harry Pettit, an employe of the Townsend Brick and Construction Co., Zanesville, Ohio, was seriously injured by getting in between two cars and being crushed badly about the chest and back.

Racine County, Wis., was swept by a cyclone and the brick plant of F. H. Heumerson & Sons at Racine was lightning struck, stunning six workmen and injuring John Haumerson. All recovered.

The schedule of assets and liabilities of the Cleveland Brick Co., Canton, Ohio, in which W. L. Davis, ex-vice-president of the Canton State Bank, was interested are: Assets, $162,601.70; liabilities, $210,220.37.

Marie Holdock, of near Uhrichsville, Ohio, has entered suit against the Advance Fire Clay Co. for $1,800 damages, claiming her property was damaged to that extent by sulphurous water coming from the clay mines.

The Composite Brick Co., New Haven, Conn., has been sued for $9,000 by Edward Malley and by others for smaller sums. Mr. Malley sues to foreclose a mortgage on the property of the company. The concern never made any brick.

Judge Cross has set aside the sale of the William F. Fisher Co.'s brick plant at Sayreville, N. J., on account of a bid of $60,000 from other parties, which is $5,000 higher than the former bid. Property will be offered at public sale again.

THEY INCREASE THE WAGES OF THEIR MEN

The following notice was posted at the Tiffany Enameled Brick Co.'s works at Momence, Ill.:

Beginning July 17, 1905, and until further notice, the following changes will be made in wages paid by this company:

All men receiving 15 cents per hour raised to 17½ cents per hour.

All men receiving 16½ cents per hour raised to 19 cents per hour.

All men receiving 17½ cents per hour raised to 20 cents per hour.

(Signed) TIFFANY ENAMELED BRICK CO.,
Per E. HARDY, Supt.

The working hours at the brick yard are as follows:

On all days except Saturday, from 6:30 A. M. to 5:30 P. M., with a half hour for dinner at noon. In addition to this an intermission of ten minutes is allowed for a lunch from 9:00 to 9:10 A. M.

On Saturdays work begins at 6:30 A. M. and stops at 12:00 noon, thus giving a Saturday half holiday the year around.

By working 10½ hours during the week except Saturday, the extra half hours about makes up the time lost Saturday afternoon, which arrangement the men seem to prefer.

THE POTTERY TRUST IS ONLY ON PAPER.

Stories of the formation of a gigantic pottery trust, with double column heads, have been occupying prominent places in many of the leading dailies during the last week. Newton Jackson, the Philadelphia broker, who has been endeavoring to secure options on many of the different plants during the last few weeks caused the statement to be given out that he had closed agreements with a sufficient number to give his hair-brained scheme a reality and clothe it with the control of the tableware output of the United States. The announcement states that 75 per cent of the producing capacity of the country is included in the new combination. Investigation has shown that such is not the case. Jos. G. Lee, of the Knowles, Taylor & Knowles Co., of East Liverpool, O., stated in connection with the matter: "I can say positively that there is no truth in the report that such a combination has been effected. Newton Jackson had some talk with the officers of my company, including myself, but we have never considered the giving of an option—in fact, never had a definite offer. There could be no possible benefit from such a combination, and I know it has not been perfected. There are upward of 30 plants operating in this section, and while some of the smaller concerns may have entertained offers none of the larger establishments are known to have agreed to any combination."

W. E. Wells, of the Homer Laughlin China Co., also denies the report that his company is included. He says: "It may be that other companies have gone into the combination, but if they have I know nothing of it. Mr. Jackson has been in East Liverpool several weeks and I understand has been endeavoring to get options on various plants. How well he succeeded I do not know, but I do know that he has no option on the Laughlin plant. Of course if any person wants our plants and pays the price we set upon them, we may be willing to sell, but on no other conditions."

President Thomas Carr, of the Warwick Pottery Co., when asked as to whether his company had entered the combine, admitted that a letter had been received recently from the promoters, but he said the negotiations had not reached a stage when the matter was in shape to be presented to the stockholders of the company. He declined to express an opinion on the feasibility or desirability of the proposed combination, but said that before he favored such a move he would want to feel well assured that no mistake was being made.

Frank Sebring, of the Sebring Potteries Co., stated that no option had been given on their plants. Others that are known not to have endorsed the movement are the Pope-Gosser China Co., the American China Co. and the Union Potteries Co. Without these companies it will be easily seen the trust could not have the controlling power which its promoters claim.

The New Era Gas Engine Co., 95 Dale avenue, Dayton, Ohio, have their ad on page 51 of this issue. A testimonial from a brick manufacturer as to their engine is quite interesting. Read it.

ROOFING TILE CONCERN ABSORBS THE PLANT AND BUSINESS OF THE IMPERIAL COMPANY.

Announcement has been made of the purchase of the Imperial Clay Co. of Cleveland by the Celadon Roofing Tile Co. of New York. The entire plant, assets and business of the Cleveland concern have been taken over by the Celadon company. The Imperial company's factory is at New Lexington, O.

In announcing the deal the Celadon Company says:

"The necessity of this move was owing to our inability to take care of a rapidly growing business with the present capacity of the Alfred plant, located at Alfred, N. Y., and the imperative demand for an immediate increased output. By acquiring the New Lexington plant we have trebled our capacity and secured a product, the character of which is exactly similar to our own, both being the highest grade roofing tile on the market. In addition to the roofing tile the New Lexington plant will continue the manufacture of its high grade face brick."

The sales office for roofing tile will be located in New York city, but the sales office for brick, as well as the operating and financial conduct of the business, will remain in Cleveland.

A. W. Brown, who was president of the Imperial Company, becomes treasurer of the consolidated concern, while W. R. Worley retains the position of vice-president and general manager, which he held in the Imperial Company.

MOTOR FOR EACH BRICK MACHINE.

The experiment in utilizing electricity as power for operating a brickyard is being made by E. Maitland Armstrong at Roseton, N. Y. The Newburgh News says that the work is not to be classed as an experiment, as careful investigation was made by Mr. Armstrong and Joseph Cite, his engineer, and a contract for a term of years was made with the Newburgh Light, Heat and Power Company for electricity for operating the yard.

Each brick machine is to be operated by its independent electric motor, making each machine a compact and separate unit stopped and started at will without regard to its neighbor. This obviates long lines of heavy shafting with the excessive friction losses that go with the old style brickyard arrangement.

On Monday of last week the first machine was put into operation and has been running successfully each day since. A second machine is being assembled and will probably be started soon, and two others are to follow as soon as the machinery can be erected. Additions will be made from time to time until fourteen machines in all are in operation. All the auxiliary machinery is to be operated by electric motors, such as pumps for furnishing water to the brick machines and for fire purposes, the burning shed being piped and supplied with hose connections at frequent intervals.

The operation of this yard is being watched with considerable interest by other manufacturers and if successful will undoubtedly be copied because of its efficiency and decreased cost of operation and maintenance.

THE PETTYJOHN COMPANY COMPELLED TO GET LARGER QUARTERS.

The Pettyjohn Company, Terra Haute, Indiana, has been recently incorporated owing to the great increase in their business and new location has been secured at 622 North Sixth street. It is probably the best factory site in the city, being only six blocks from the principal retail business corner in town, and at the crossing of the Vandalia-Pennsylvania railroad lines and the principal street car line. They have a space of 170x140 feet with their own side track, have erected a new factory building of concrete blocks made on their own machines and are now rapidly installing automatic machinery so as to be prepared to handle all business that they may have with promptness and despatch, as well as to reach out for foreign business which is something that they have been unable to do in the past for the reason that it has taxed their capacity to the utmost to keep up with their domestic business, a large portion of which has been received from purchasers who already were using their machines, and desired more of them.

They have recently placed on the market a new model of machine which makes the blocks with the face down and which uses granular concrete face plates instead of cast-iron face plates as is the custom. Such blocks possess all the granular texture and feel of natural stone and the whole process is fully described in their catalogue called "Making Faces," which is sent to anyone upon application.

TILE WORKERS WILL HAVE THEIR PICNIC IN AUGUST.

The employees of the American Encaustic Tiling Company, Zanesville, O., have decided to hold their annual outing on Saturday and Sunday, August 12 and 13. They have not yet decided where they will go, but some desirable place not too far removed from this city will be selected.

These annual excursions have proven most enjoyable affairs in the past and have been attended by hundreds of persons not employees at the city's largest manufacturing establishment. Special rates are always secured to the place selected by the excursionists for their outing and all possible arrangements are made for the comfort and convenience of the large crowds.

The place for holding the outing will be submitted to a vote of the employees and in this way each individual will be allowed to express a preference. The place receiving the largest number of votes will be selected and the matter of rates will then be arranged.

WHERE BRICKMAKING BOOMS.

On Wednesday of last week the Rose Brick Co., at Roseton, N. Y., made the greatest number of brick ever made in one day in one brickyard, 44½ pits and 1,000,000 brick. Three times in June this company has made between three-quarters of a million and a million of brick in a day, equal to about 34½ pits a day. At the present time it is estimated that the Rose Brick Company will run over 80,000,000 brick for the year.

UNION FINES A COMPANY FOR MAKING LARGE BRICK.

A fine of $240 has been assessed by the Brick, Tile and Terra Cotta Workers' Union against the La Bahn Brick Company, Lansing, Ill., for alleged violation of the working agreement relating to the size of brick. According to the union agreement the size of brick is stipulated at 2¼ by 8 by 3⅞ inches.

For some time the union officials claim the La Bahn Brick Company has been making larger brick, and in such cases the union claims the power to assess fines upon the company, to be paid to the setting gang and burners employed by the company. The company has not paid the fine and a strike is threatened.

The union also charges that the William Bock & Sons Company and the Lake View Brick Company, Chicago, are not living up to the agreement in the matter of employing a certain number of workmen on each kiln.

THE UTAH ARTICLE CAN BE PROFITABLY SOLD IN CALIFORNIA.

According to Charles J. Brain, the well-known architect and builder, there should be a good continuous market in California for one of the manufactured products of Utah. Mr. Brain and his family have just returned from a six weeks' visit to the coast, during which he visited all the important cities and towns. He reports that in San Francisco, especially, there is a building boom that has never been equaled in the history of the Golden Gate. His own profession was sufficient excuse for his getting information as regards prices, and he made the astonishing discovery that all kinds of building brick cost an average of 100 per cent more in San Francisco than is paid by Utah builders.

Continuing his investigation on this line, Mr. Brain ascertained the freight rates on this class of commodity and is ready to assert that Utah manufacturers of brick can ship their product into San Francisco and sell at a minimum figure 25 per cent lower than the San Francisco prices and make a good profit.

Another feature that immediately presented itself to him was the fact that the quality and grades of the California brick were inferior to the article produced here.

The condition is to be presented to the Commercial club. An inquiry into the conditions is expected to follow and the prospects look good for another export field for one of Utah's most important products. It will probably surprise some people to learn that some of the Salt Lake brick manufacturers are even now shipping the Utah product into southwestern Colorado in competition with the Colorado article.

THE BEST HAND CHEMICAL FIRE EXTINGUISHER EVER PRODUCED.

O. J. Childs Co., Utica, N. Y., are again entitled to credit for their enterprise and work in building up a reputation on their celebrated fire extinguishers. In Department Circular No. 8, dated Washington, D. C., July 10, 1905, issued by the Department of Commerce and Labor under the general rules and regulations of steamboat inspection service, their celebrated "Child's" fire extinguisher is found in the approved list of fire extinguishers named in said circular. The above comes from an act of Congress (after considering the burning of the steamer Slocum) to compel the owners of all steamboats to provide approved hand chemical fire extinguishers for their boats. Number of the fire extinguishers governed by size and capacity of steamer.

POTTERY NEWS ITEMS.

The Fulper Pottery at Flemington, N. J., which was established in 1805 will celebrate its 100th year anniversary.

The Electric Porcelain Co., Findlay, Ohio, will occupy the Old Bell pottery plant. One hundred men will be employed.

The Barberton (Ohio) Pottery Co. has been declared a bankrupt and Orlando Wilcox of Akron, Ohio, appointed the receiver.

Louis Jack, one of the original owners of the Lancaster, Ohio, Pottery, has purchased the old plant and will reopen it in the near future.

The Roodhouse (Ill.) Pottery Co. has been incorporated with $50,0000 capital stock, by H. C. Worcester, Edward M. Husted and William H. Ainsworth.

The Marion (Ind.) Clay Pottery Co. filed articles of incorporation with $10,000 capital stock. The new stockholders are R. R. Cramer, A. W. Risser and U. S. Shelly.

The E. A, Hull Pottery Co., Crooksville, O., has been incorporated with $50,000 capital stock, by A. E. Hull, F. H. Griswold, Wm. Watts, J. D. Young and G. E. McKeever.

The Florentine Pottery Co., Chillicothe, Ohio, has been incorporated with $55,000 capital stock by F. C. Arbentz, Herbert Machin, F. G. A. Arbenz, J. M. Wheat and C. H. Arbenz.

The new plant of the North American Mfg. Co., which is to be built at Newell, across the river from East Liverpool, Ohio, is to be started at once. The plant will cost $1,000,000.

Vander, Meulen & Wykstra Art Pottery Co., Dunkirk, N. Y., has been incorporated with $2,000 capital stock, by T. F. Vander Muelen, Garrett, Nykstra and Catherine P. Vander Meulen.

The Iroquois China Co. has been incorporated with $75,000 capital stock. Incorporators are James Kerr, Clearfield, Pa.; Albert B. Kerr, New York; C. Bertram and J. B. Gere, of Syracuse, N. Y., and Lamont Stilwell, of Solvey.

China, Glass and Lamps, the well-known pottery journal published at Pittsburg, Pa., has out a directory for 1905 containing a list of the potteries of the United States, the officials, heads of sales departments, sample rooms and traveling representatives.

A BIG POTTERY FOR WEST VIRGINIA.

Several months ago we announced that the North American Manufacturing Co., T. B. Lawrence, general manager, East Liverpool, Ohio, had decided upon the establishment of a $1,000,000 pottery plant at West Newell, W. Va. Plans and specifications for this plant are now being prepared by Charles Bickel, 524 Pennsylvania avenue, Pittsburg, Pa. They call for the erection of nine buildings of mill construction as follows: Five-story structure 45x600 feet, one-story kiln shed 536 feet long, one-story glost warehouse 536 feet long, one-story bisque kiln shed 536 feet long, three-story building for clay works 600 feet long, two-story stockhouse 34x166 feet, one-story kiln shed for decorated ware 27x208 feet, two-story office building 64x64 feet, and power-house. These buildings will cost about $700,000. It is stated that proposals for the construction work will be taken about August 1.

SAND OR LIME-BRICK OR BLOCK NEWS.

Hiram Brannin is to establish a concrete block factory at Carmi, Ill.

Stover & Englesby, Watertown, S. Dak., are now making sand cement brick.

The Minnesota Cement Brick Co., Fergus Falls, has been incorporated with $80,000 capital stock.

The Ferro Concrete Co., Cincinnati, Ohio, has increased its capital stock from $50,000 to $100,000.

The Red Wing (Minn.) Brick Co. will soon commence making sand-lime brick at their new plant.

Plant City, Fla., will soon be making sandlime brick to supply the home demand and surrounding country.

R. H. Bowen, of Keokuk, Iowa, was in Mankato, Minn., demonstrating his machine for making sand cement brick.

The Houston (Texas) White Brick Co. has amended its charter, increasing its capital stock from $80,000 to $125,000.

John D. Lutterrell is considering the moving of his cement brick plant from Lake City, Ind., to Benton Harbor, Mich.

W. P. Robinson, Madison, Ga., is interested in the manufacturing of sand-lime brick, the cost of machinery and the brick.

The Business Men's Association of Beloit, Wis., have before them the proposition to build a sand-lime brick plant in that city.

The Schwarz System is to have another sand lime brick plant at Clarksburg, W. Va. Thos. G. Brady and others are interested.

A. J. Johnson and W. A. Cotter have purchased the plant of the Toledo (Ohio) Cement Building Block Co., and will greatly enlarge its capacity.

Oxford Mill has secured a plant for making cement fence posts and tile. B. F. Loomis, who has a large plant at Memphis, Mich., is the promoter.

Sand-lime brick machinery manufacturers are requested to communicate with J. H. Merrill, Thomasville, Ga., regarding cost of brick and machinery.

The Toronto Sand-Lime Brick Co. has been incorporated with $40,000 capital stock. Directors—G. H. Large, John Shultz and John S. Proctor, all of Toronto Junction, Ontario.

The Sea Coast Stone & Brick Mfg. Co., 1115 Monroe avenue, Neptune, N. J., has been incorporated with $50,000 capital stock by E. F. Sweet, G. B. Bennett and Raymond Pawley, all of West Asbury Park, N. J.

The Boise (Idaho) Building Material Co., Ltd., has been incorporated with $50,000 capital stock. The incorporators are D. O. Stevenson, J. W. McLean, E. C. Rowell, John Porter, W. S. Porter and H. C. McLean. They will build a sand-lime brick plant.

The Schenectady (N. Y.) Brick Co. are now receiving bids for their sand-lime brick plant. The directors of the company are Senator E. T. Brackett of Saratoga Springs, Lewis M. King and Daniel Naylor Jr. of Schenectady and Henry V. Borst of Amsterdam.

MISCELLANEOUS ITEMS.

Unionville, Mo., is to have a brick and tile plant.

The Traverse City (Mich.) Brick Co. has secured an order for 3,000,000 brick to be used at Cadillac.

The Reinbeck (Ia.) Brick & Tile Works think seriously of using oil for burning brick instead of wood or coal.

The new Thew Steam Shovel recently put in at the Strong Brick Co.'s works at Kego, Ala., is proving a great success.

Robert Knapp, of Matamoras, Mexico, has the right from the state government to build a brick factory, and is exempt from taxes for five years.

The Sheldon Brick Co., Champaign, Ill., has been incorporated with $15,000 capital stock by John W. Stipes, R. A. Stipes and J. W. Stipes, Jr.

The old Koch brick works in South Lehighton, Pa., has passed into the ownership of the Lehighton (Pa.) Brick Co. with Ira E. Seidle as manager.

The Federal Fire Proofing Co., Chicago, Ill., has been incorporated with $2,500 capital stock by John G. Campbell, G. L. Gray and Henry A. Ritter.

The Bellington (W. Va.) Brick Co. has been organized with J. A. Crisp, president; J. I. Alexander, secretary, and J. M. Coffman, manager and treasurer.

The Marion (Ind.) Clay Pot Co., has been reorganized with $10,000 capital stock, by Richard R. Cramer and A. W. Risser, and U. S. Shelly, of Findlay, Ohio.

John W. Schultz, 316 Eighth street, Oshkosh, Wis., has found a fine bed of clay at Omro, eight miles west of the city, and will build a pressed brick plant there.

The Alma Clay Co., Canton, O., has been incorporated with $150,000 capital stock by Perry J. Cooper, J. Schoeneman, John W. Willis, H. W. Rose and H. S. Unkefer.

A company organized by Peter English, Ft. Collins, Colo., will shortly begin the manufacture of brick near McClelland's switch, turning out 20,000 pressed brick daily.

The Sugar Grove Brick Co., of Columbus, Ohio, has been incorporated with $125,000 capital stock by W. H. Hittler, George C. Bohn, E. E. Slater, B. L. Pond, and C. E. Myers.

The Hocking Valley Fire Clay Co., Nelsonville, Ohio, has been incorporated with $10,000 capital stock by F. A. Freer, Carl E. Jewett, W. H. Cushing, I. V. Jewett and B. C. Coore.

The Wm. L. Johnson Sewer Pipe Co., St. Louis, Mo., has been incorporated with $10,000 capital by William L. Johnson, 98 shares; W. K. McDonald and A. M. Johnson, 1 share each.

To accommodate their increasing business the Wheeler-Osgood Co., Tacoma, Wash., has found it necessary to add two new kilns to their plant. They will be installed by John H. Regan, the company's engineer.

The Dempsey-Gabriels Brick Co., Half Moon, N. Y., has been incorporated with $10,000 capital stock. The directors are William Dempsey, of Crescent; D. C. Dempsey, of Cohoes, and Alfred P. Gabriels, of Watervliet.

I. G. Holdridge and Henry Babb of Gridley, Ill., will start a brick and tile works at Corinth, Iowa.

The Harbison-Walker Refractories Co., Pittsburg, Pa., have staked out a large plant at Templeton, Pa.

W. E. Allison of Vandalia, Ill., and his associates have arranged to start a brick and tile plant at Wichita Falls, Texas.

The Celadon Roofing Tile Co., New York City, N. Y., and works at Alfred, has increased its capital stock to $500,000.

Ostrander & Conopa, Eastman, Wis., are making brick and modern machinery will be added and the capacity of the plant doubled.

Chas. H. Mattox, Manchester, Iowa, has installed coal burners in his brickyard and will use coal instead of wood to burn his brick.

A new brick manufacturing company is to establish a plant on Fifth avenue, just south of Robinson street, at Soho Curve, Pittsburg, Pa.

The first kiln of brick of the Lake & Cotrill Brick & Tile Co., Chenandoah, Iowa, has been opened and the quality is satisfactory to the owners.

The Peninsular Brick Co., Salisbury, Md., is making extensive improvements to their plant by adding new kilns and increasing the machine capacity.

The plant of the J. S. Evans Press Brick Co., Addington, I. T., has been sold to the highest bidder, H. L. Welch. The plant was Addington's greatest industry.

Workmen drilling on a farm near Turner, Mich., struck a 14-foot vein of fire clay, below which is 20 foot of gypsum, and underneath that a six-foot vein of coal.

The Kaaterskill Paving Brick Co. of Catskill, N. Y., has been incorporated with $500,000 capital stock. The directors of the company are New York & Brooklyn parties.

The Livingston (Tenn.) Brick Co. has been incorporated with $2,000 capital stock by W. R. Officer, J. W. Rich, A. L. Windle, C. J. Cullom, W. W. Windle and E. C. Knight.

The Alex. Scott Brick Co., Knoxville, Tenn., have started their new $60,000 brick plant. It is equipped with many labor-saving devices, one of them being the Scott patent brick car.

The Bronson-Kalamazoo (Mich.) Portland Cement Co.'s plant has been sold to the Chanute (Kan.) Clay Product & Cement Co. The plant is at Bronson and the marl beds at Kalamazoo.

Plans for the increasing of the capacity of the Ogden (Utah) Sewer Pipe & Clay Co.'s plant have been approved by the directors of the company. A total of $30,000 will be expended.

Robert Heiden, John McGorgin, of Milwaukee, Wis., are considering organizing a stock company with $160,000 capital stock to operate the brick works in the Wheelock addition at Hartford. The owner of the property offers to give the property free for ten years if they employ 50 hands and make 100,000 brick daily.

Ellis Sticket has purchased an interest in a brick works at Logan, Iowa.

The Wolverine Portland Cement Co., Coldwater, Mich., has declared its regular semi-annual 3 per cent dividend.

The Architectural Terra Cotta Mfg. Co., Bradford, Pa., are having plans drawn up by L. O. Landworthy for a new plant.

A company is being organized to manufacture Portland cement at Selma, Ala. A. G. Parrish, president of the City National Bank, is interested.

Benj. Switzer of Los Angeles, Cal., has been engaged to take charge of the brick works at Escondido of the Escondido Lumber, Hay & Grain Co.

Mason, Miranda & Co., Atlantic Bldg., Norfolk, Va., are in the market for a site to manufacture both common and vitrified for their work in that city.

Chas. W. Pugh, machinist for the Wabash Clay Co., Veedersburg, Ind., has perfected an automatic machine for repressing paving brick and is now having one built by the local machine works.

The Shawnee (Ohio) Flash Brick Co. will erect a new plant. The buildings being 60x102 and 96x203 and 36x96, all of steel and costing $50,000. E. H. Rickett of Columbus, Ohio, is the architect.

F. H. Chapin, sales agent of the Menominee Pressed Brick Co., at Minneapolis, Minn., has been appointed secretary of the Hydraulic Press Brick Co., St. Louis, Mo., and will move to that city August 1st.

The Chautauqua Portland Cement Co., Rochester, N. Y., has been incorporated with $250,000 capital stock, by Uriah Cummings, of Akron, N. Y., W. H. Spooner of Erie, Pa., and H. O. Alderman of Rochester, N. Y.

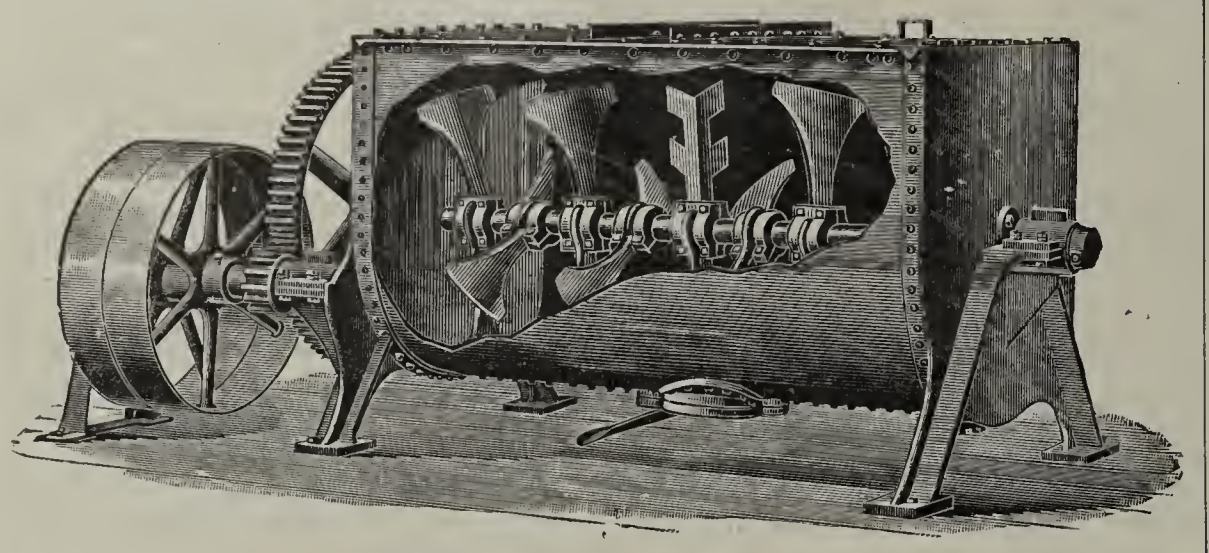
The Cleveland (Okla.) Vitrified Brick Co., capital stock $50,000, has been incorporated with G. F. Haman of Parsons, Kan., Frank L. Hamar, of Van Wert, O., and J. M. Perkins, of Cleveland, as the incorporators.

The Port Costa Brick Works, San Francisco, Cal., has been incorporated with $30,000 capital stock. The directors are C. G. Berg, R. W. Spence and Jacob Beck, of Los Angeles, and E. E. Bowles and H. G. Clark, of San Francisco.

The Northwestern Clay Co., Griffin, Ill., are putting in their machinery and will be making hollow building blocks in two weeks. Eighteen new kilns will be built, 10 of which are finished. Eight carloads of goods will be made per day.

The Indiana Brick & Quarries Co., Hillsboro, Ind., has been incorporated with $200,000 capital stock under Oklahoma laws. The incorporators are Frank C. and James R. Powers of Chicago and H. W. and L. E. Pentecost of Guthrie, Oklahoma.

The Baton Rouge (La.) Brick Co. has been incorporated with $200,000 to take over the brick yard owned by the Garig estate and rebuild and reorganize it. The officers are W. P. Connell, president; J. F. Wilson, vice-president, and Thomas Downey, secretary and treasurer.



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BRICK YARD FOR SALE.

Brick Yard for sale cheap. A bargain to the right party. Good market at hand. For further information address

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Care Clay Record, Chicago, Ill.

FOR SALE.

A good established brick yard, in a city of 40,000 inhabitants, in Illinois. Plenty of clay, and can sell all the brick that can be manufactured. Good reason for selling For particulars, address

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FOR SALE.

Profitable running brick plant, 25,000 capacity. Ready sale for entire product. Owner has larger interests requiring attention

TERRA HAUTE PRESSED BRICK CO.
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One second-hand Hercules Special Brick Machine, manufactured by Horton Mfg. Co. Capacity 30 to 40 thousand per day. Machine in first-class condition. Located in central Pennsylvania. Address

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FOR SALE.

Iron Quaker Brick Machine, manufactured at Wellington, Ohio. Used but little. Cost about $500. Taken under mortgage and will sell for $150.

ANCHOR TRUST CO,
Wichita, Kansas.

FOR SALE.

For sale, reasonable, in condition—
One 5x18 foot Horizontal Tubular Boiler.
One No. 20A Penfield Hollow Brick Machine.
One 14 foot Pug Mill.
One Disintegrator,
One 40 foot Clay Conveyor, with 20 foot belt.
Forty Fire-proofing Dies, with two extensions, pullys, clutches and belting.
Reasons for sale, are making different ware.

R. 611, W. 51st St.,
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FOR SALE.

Drain Tile and Brick Plant for sale Good machinery. Good location. Plenty of clay. Price $2300, small payment down, long time on rest. Will take product as pay. Address

CONTINENTAL,
Care Clay Record, Chicago.

FOR SALE.

A 20,000 capacity brick and tile plant, located in good Michigan town. Has Stewart patent kilns, plenty of drying sheds, all machinery in good condition, fine clay, good market, established business. Price very reasonable. Address

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Care Clay Record, Chicago, Ill.

Machinery For Sale.

FOR SALE.

50 rack cars for 32 inch pallets, capacity 432 brick; track gauge 24 inches.
Also 55 flat cars for soft mud brick, with foot pallets Track gauge 25 inches.
Both styles of cars in first-class repair.

ATLAS CAR & MFG. CO.
Cleveland, Ohio

GIANT MACHINE FOR SALE.

A second-hand No. 2 Giant Auger Brick Machine. Address

"GIANT,"
Care Clay Record, Chicago.

FOR SALE.

Right and left-hand One, Two and Three Way Switches, of various gauges, radius and weight rail, at special prices.

THE ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

FOR SALE—CHEAP—1200 Steel Crimped Pallets. 10x34 inches. Address

ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

FOR SALE—CHEAP—New and re-laying rails, 12, 16, 20 and 25 pound. For prices, address

ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

FOR SALE.

One 4-Mold Dry Press, very cheap. Good as new.

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Care Clay Record, Chicago, Ill.

FOR SALE.

100 Single Deck Cars.
3 Transfer Cars.
1 Centrifugal Pump.

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A brick and tile plant in exchange for a good Iowa or Illinois farm. Address

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Wanted, a second-hand, small size Williams Hammer Pulverizer. State best price and condition.

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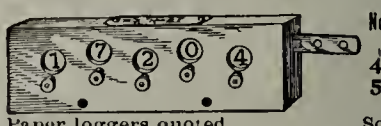

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WANTED.

A second-hand three-mold Andrus Press, in good condition. Prefer only Andrus type, as I am already using one on my yard. In naming price give length of time used and present condition.

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WANTED.

A sorter and shader to handle light and mottled face brick. Address, with full information as to experience, reference and wages expected.

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Versailles, Mo.

WANTED TO BUY.

Second-hand Combination Brick Machine, capacity about 30,000 to 40,000 per day. State price, also where machine can be seen.

Address "CASH BUYER,"
Care Clay Record, Chicago.

ENGINE FOR SALE.

Engine for sale—One 14x18 inch 80-horse power Frost Engine. Only used a short time.

ENGINE, care Clay Record,
Chicago, Ill.

FOR SALE.

Two 4-mold style "F" American Clay Machinery Co. Dry Presses, in good order. Have made about one million brick. Reason for selling is that clay is not suitable for dry press brick. A bargain for some one.

VERSAILLES FIRE-BRICK & CLAY MFG CO.
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MANAGER WANTED.

Wanted, a competent man to manage a brick plant, capacity thirty thousand per day. Must understand the running and care of machinery and management of men and the manufacture and burning of common and high grade repress brick. Applicant to state experience, salary required and give reference. A permanent position will be given to the right man.

BRICE H. CAMPBELL BRICK CO.
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New and rebuilt Slide Valve and Automatic Engines, from 3 to 200 h. p. Boilers of all types, from 5 to 150 h. p. All of our rebuilt machinery is thoroughly overhauled in our own shops by competent mechanics and modern tools. We are now offering some special bargains. Send us specifications to your requirements.

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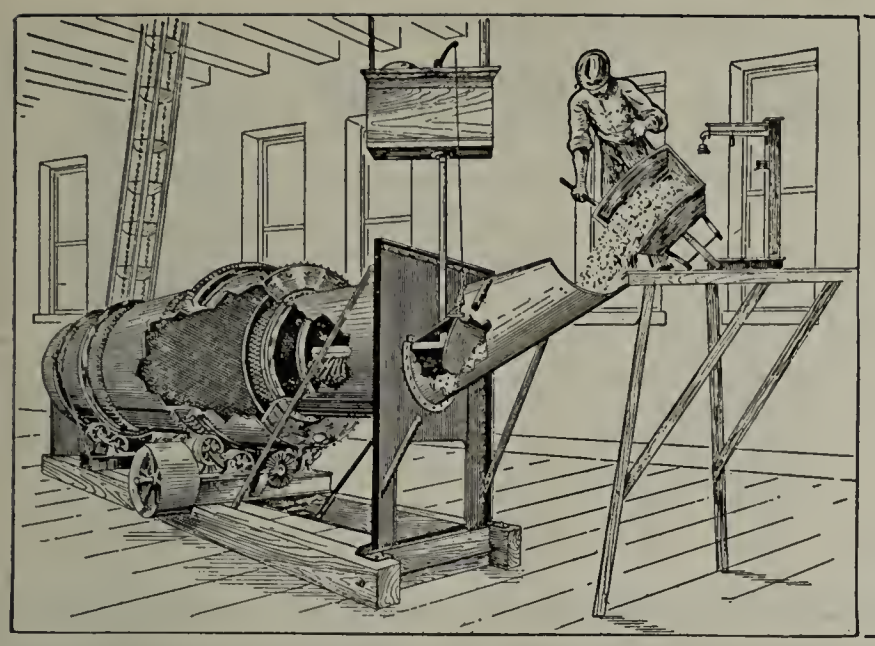

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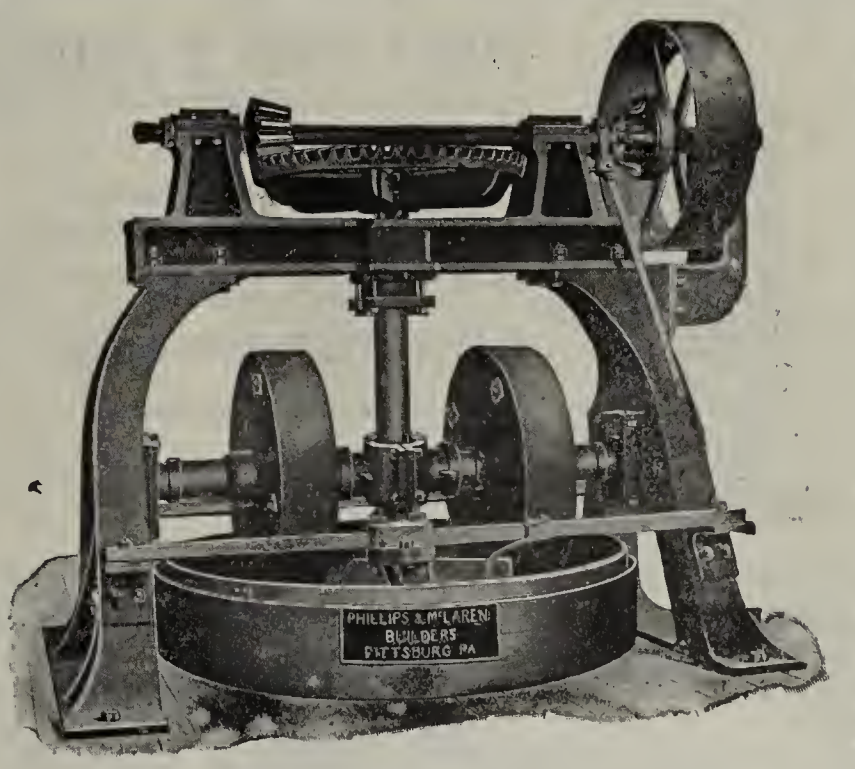

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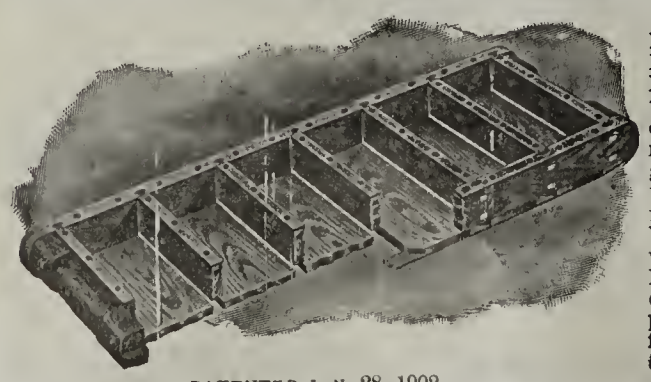

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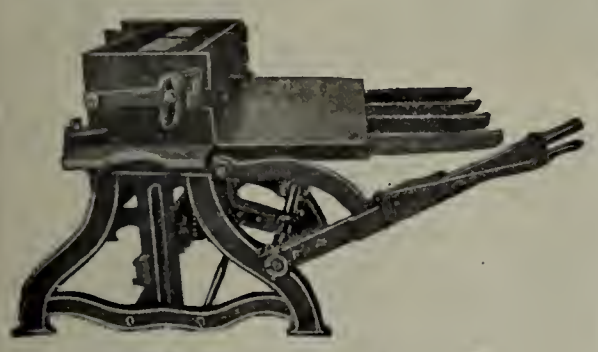

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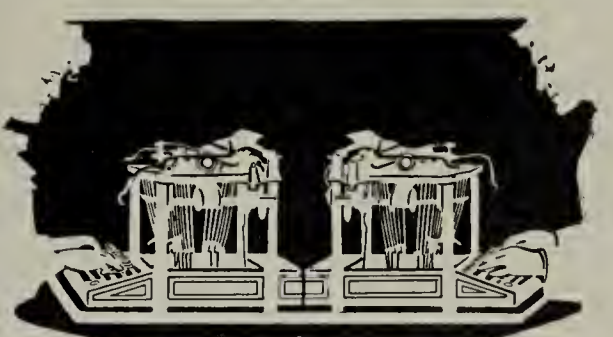

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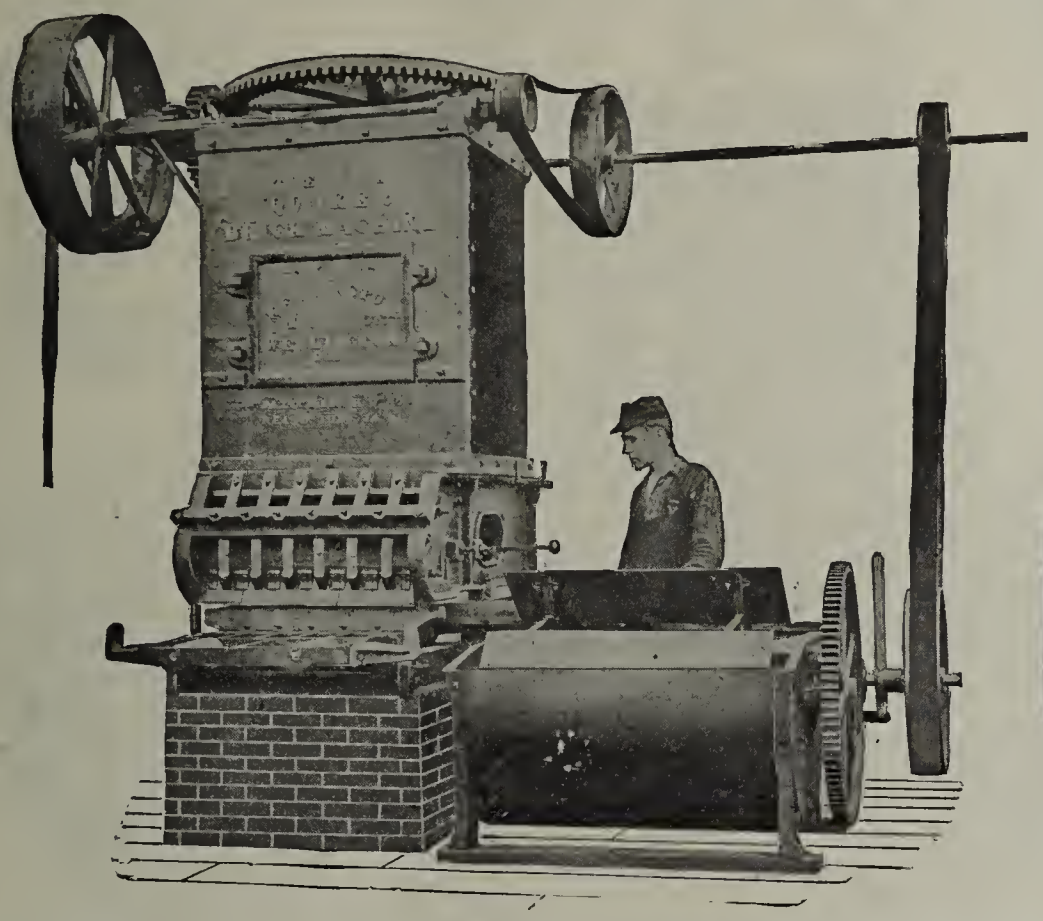

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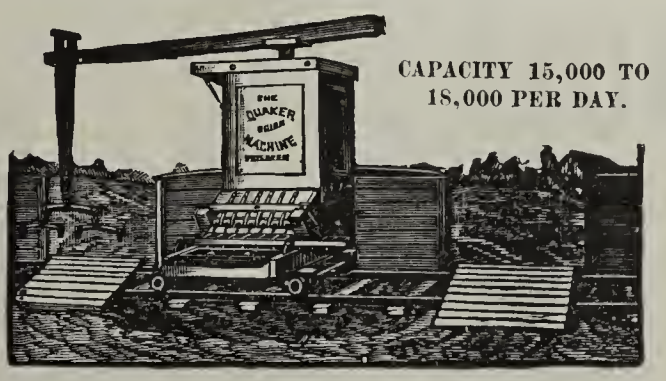

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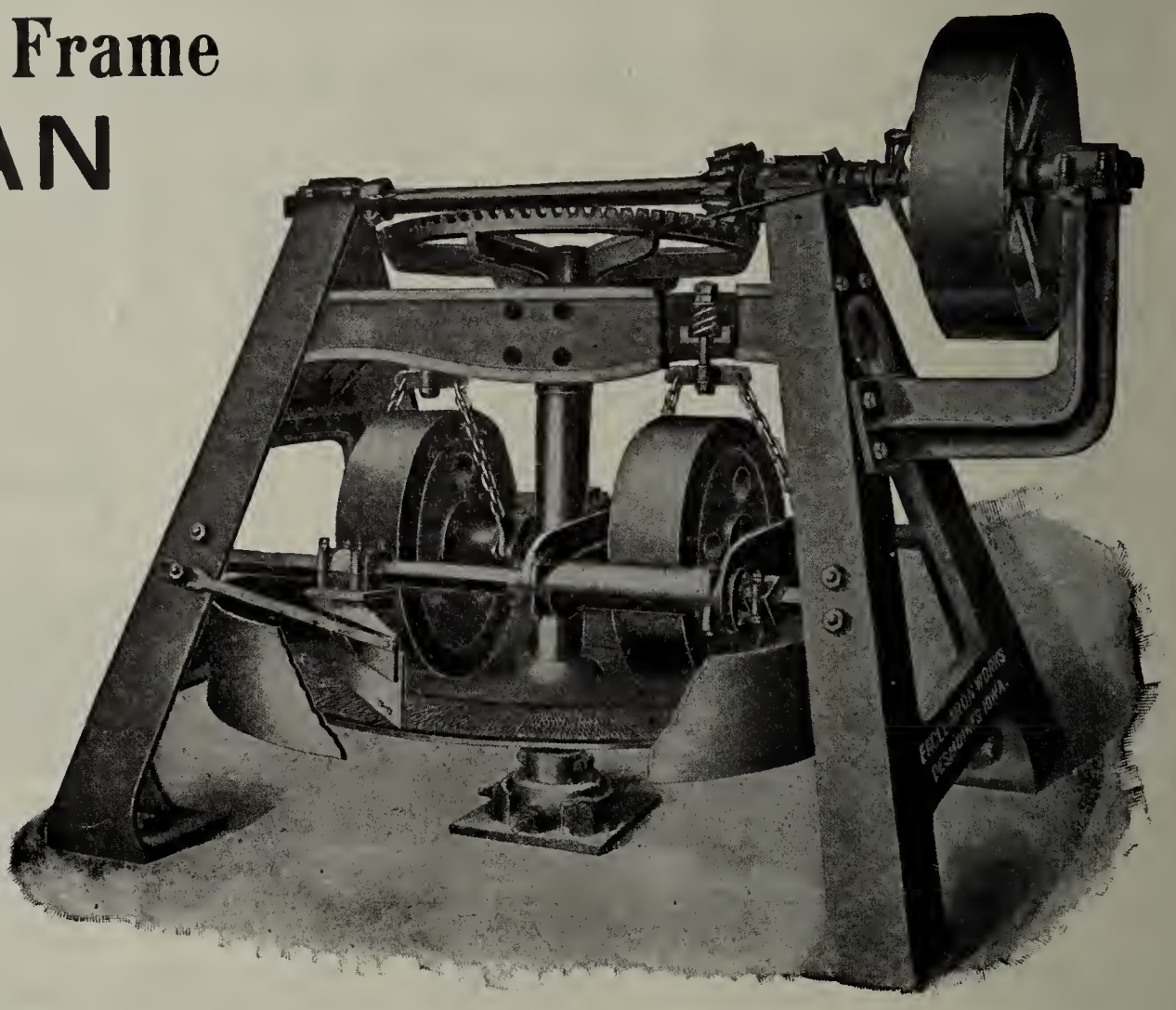

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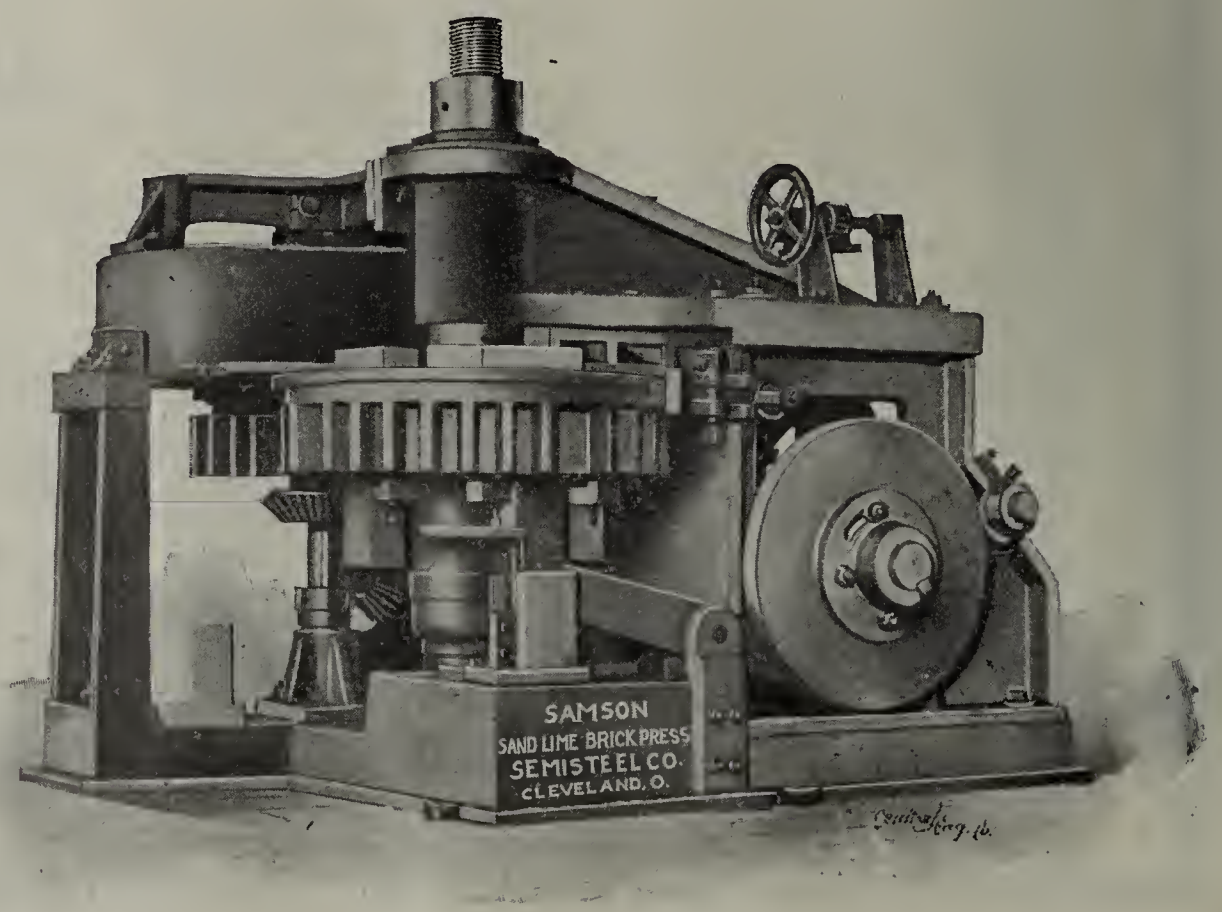

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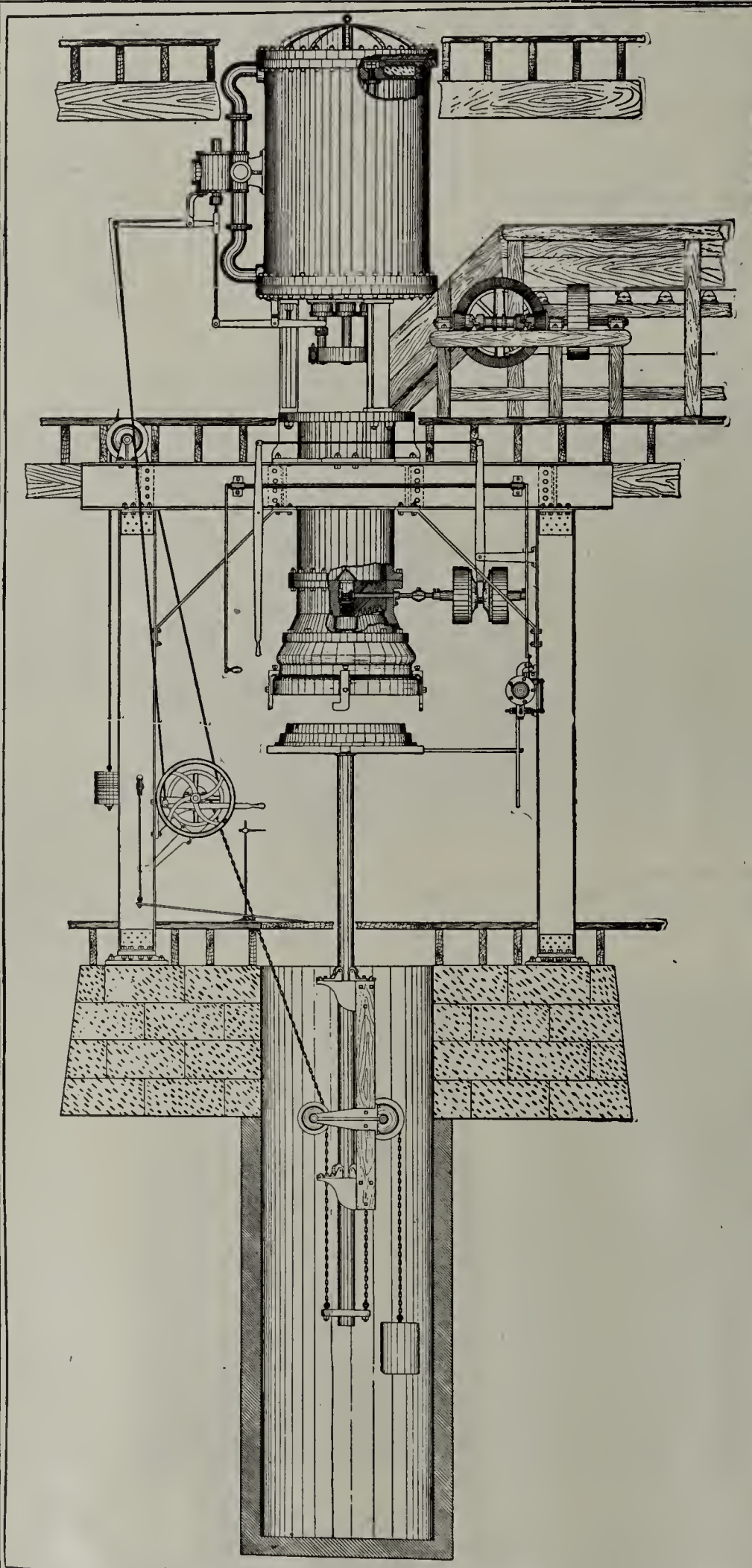

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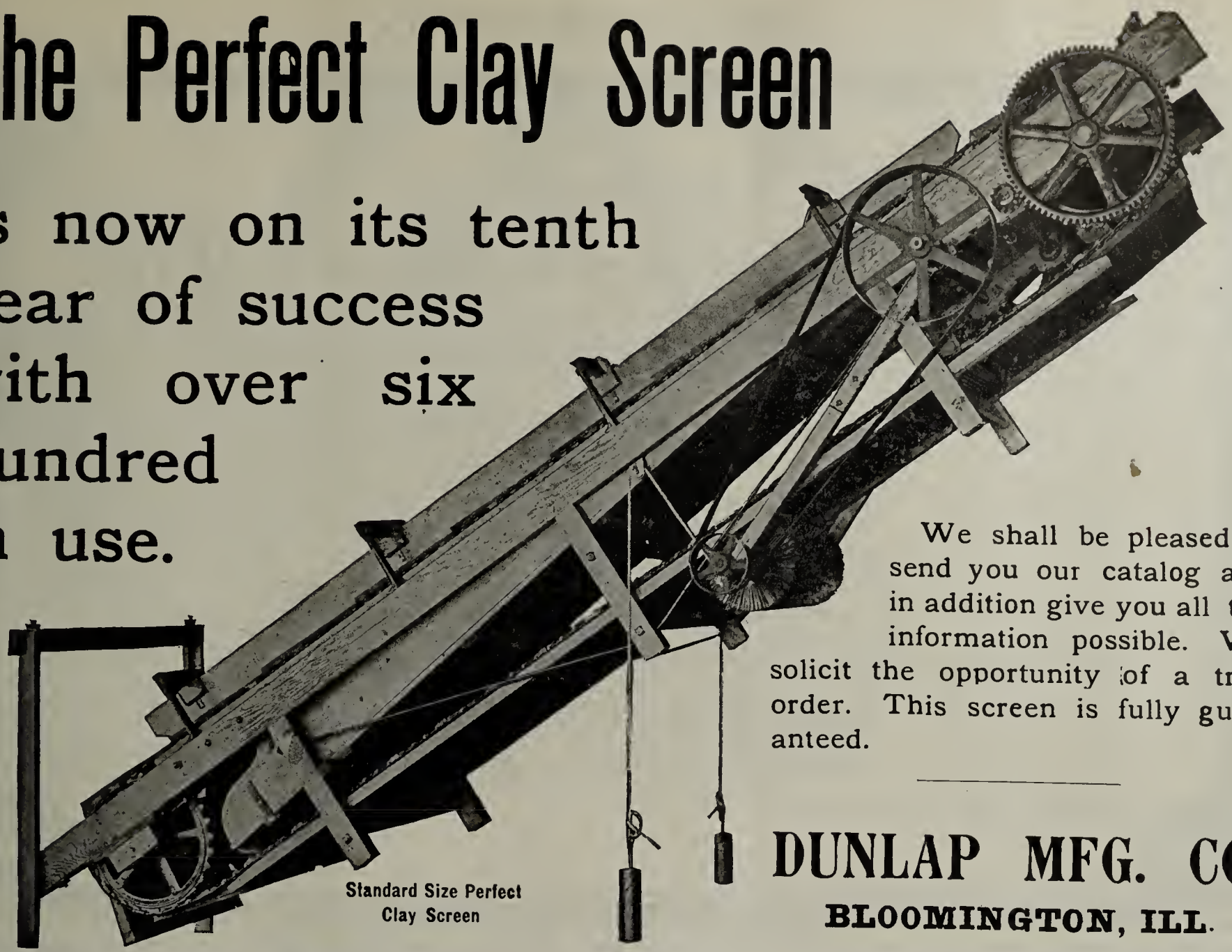

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Our apparatus is perfect.

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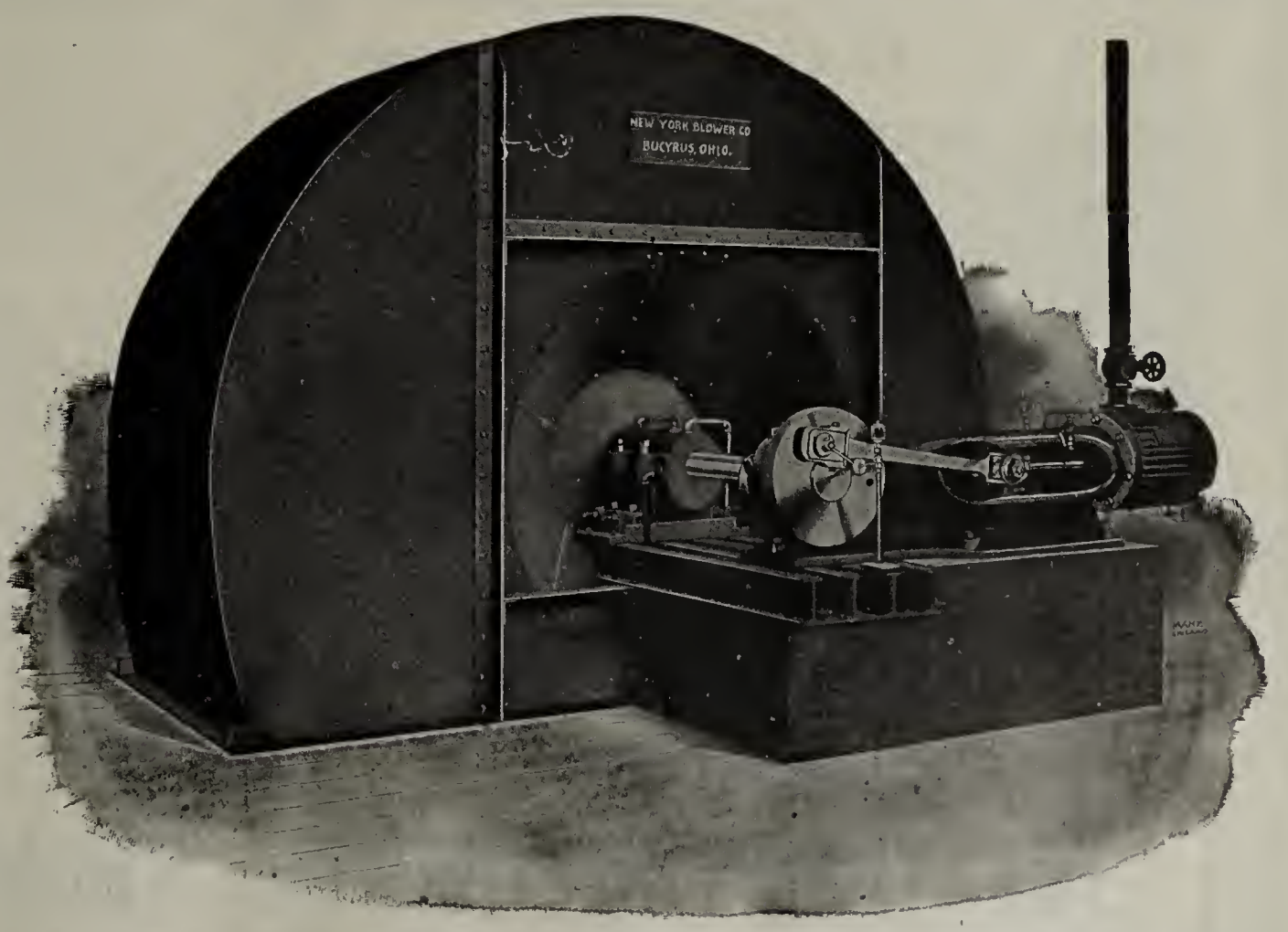

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Dry your Brick with a Rodger's Dryer and you'll

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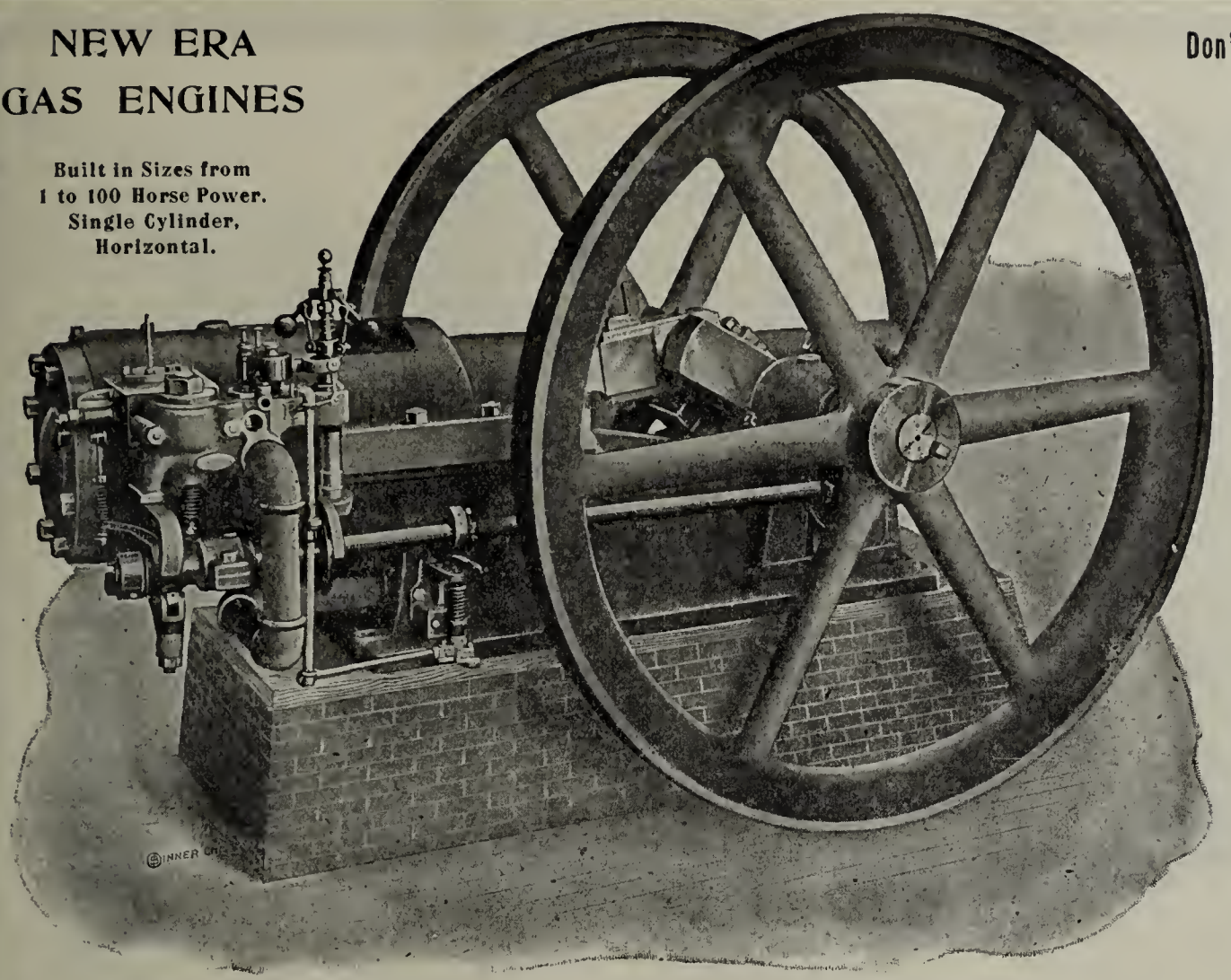

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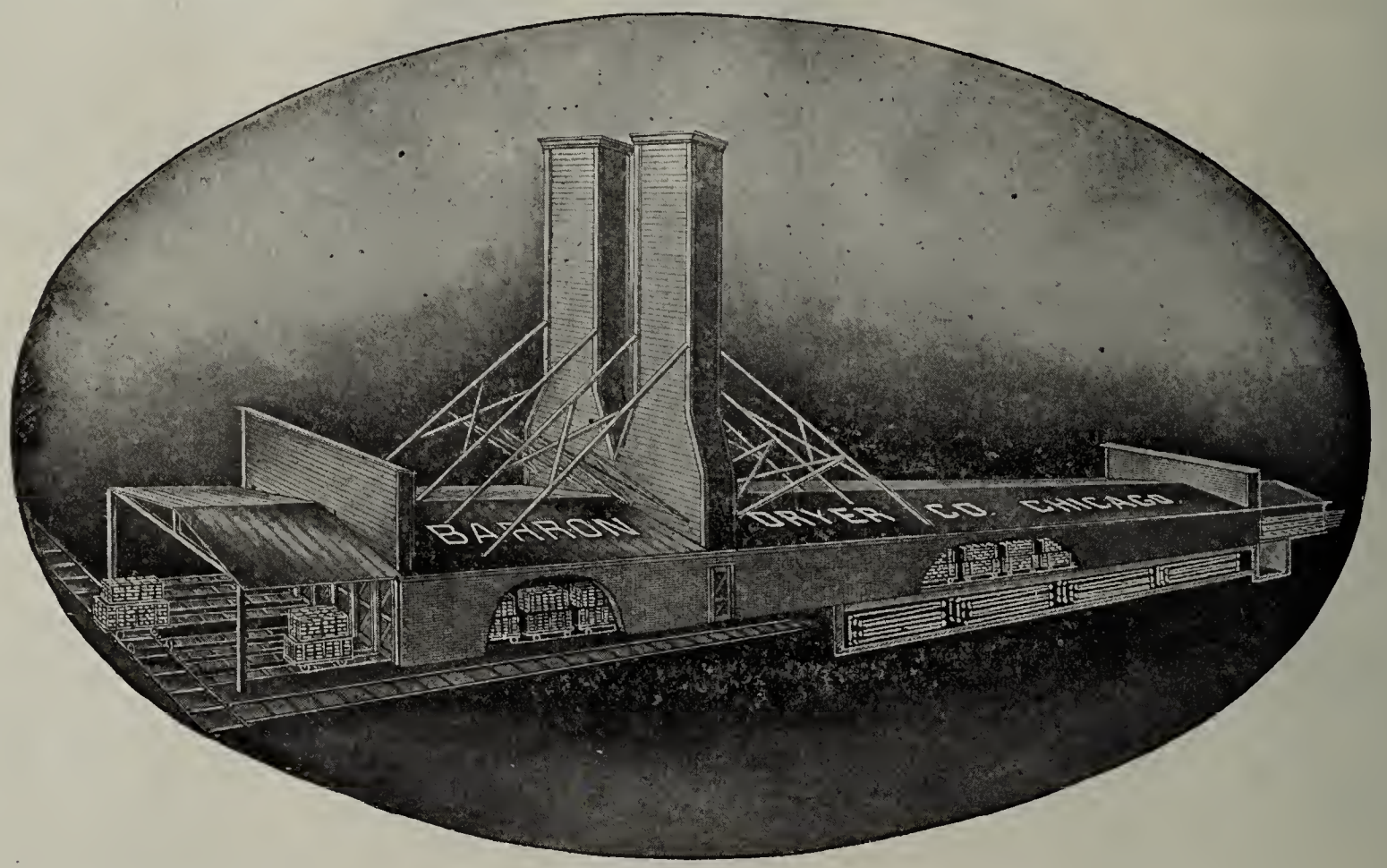

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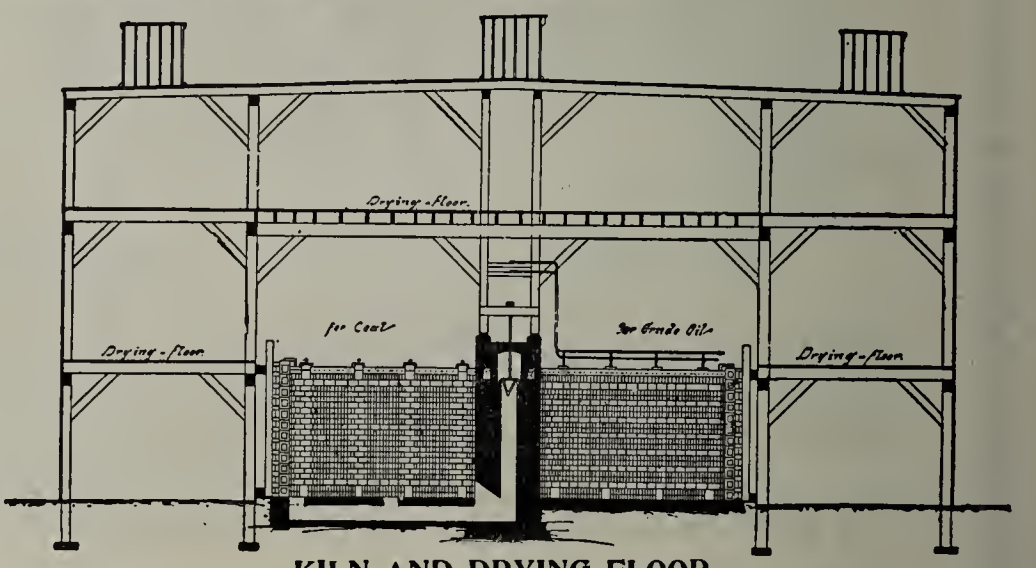

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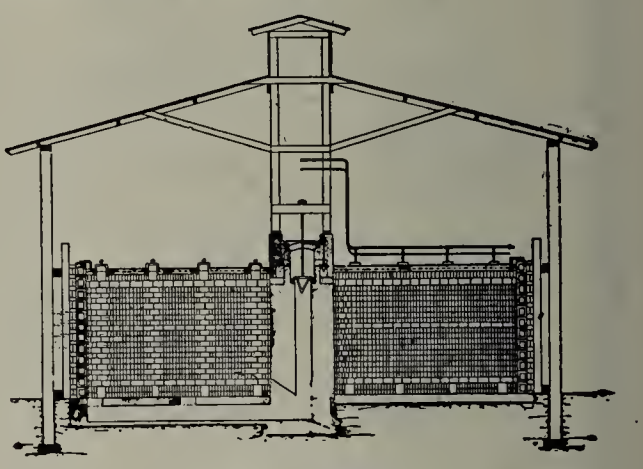

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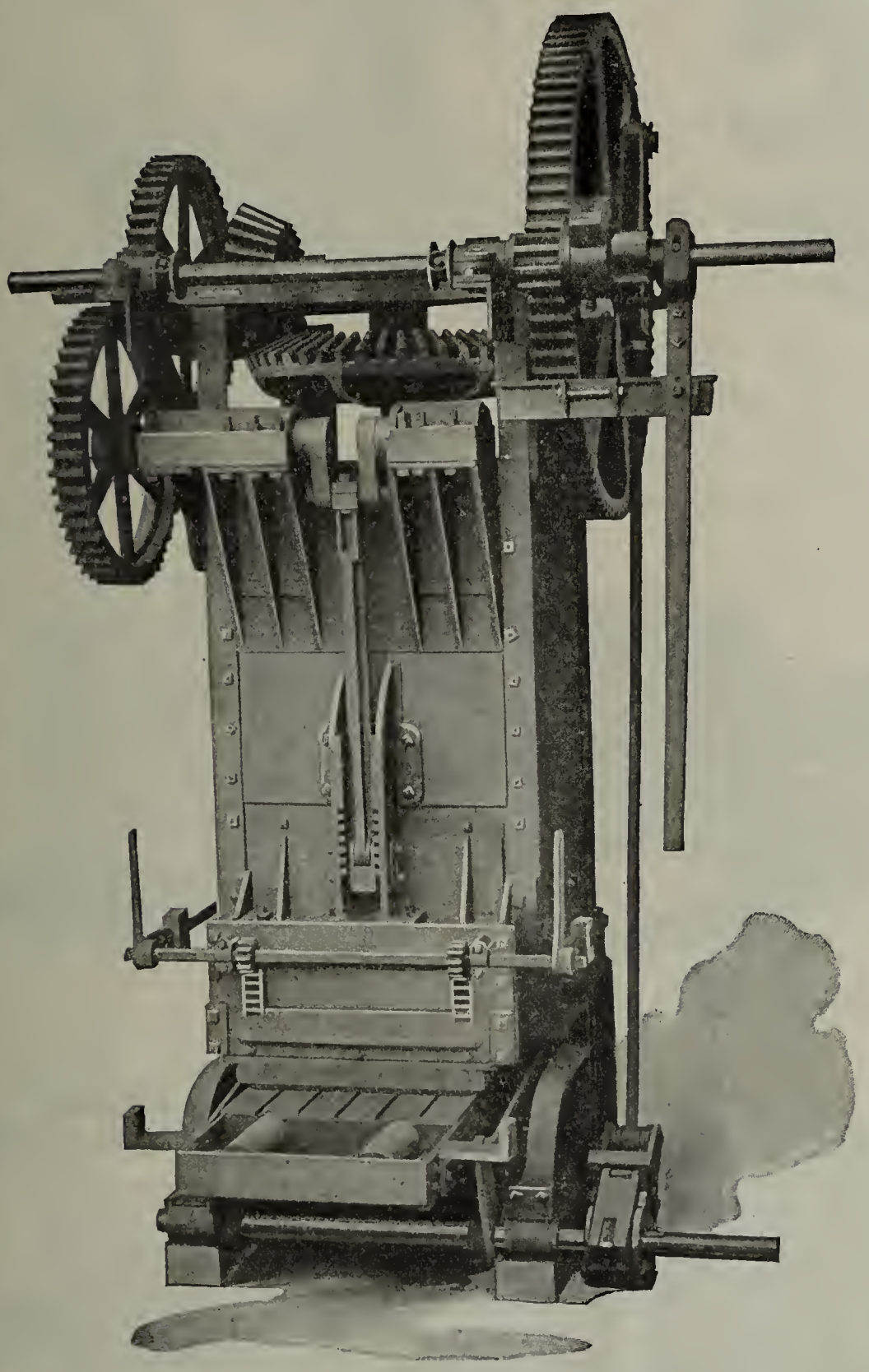

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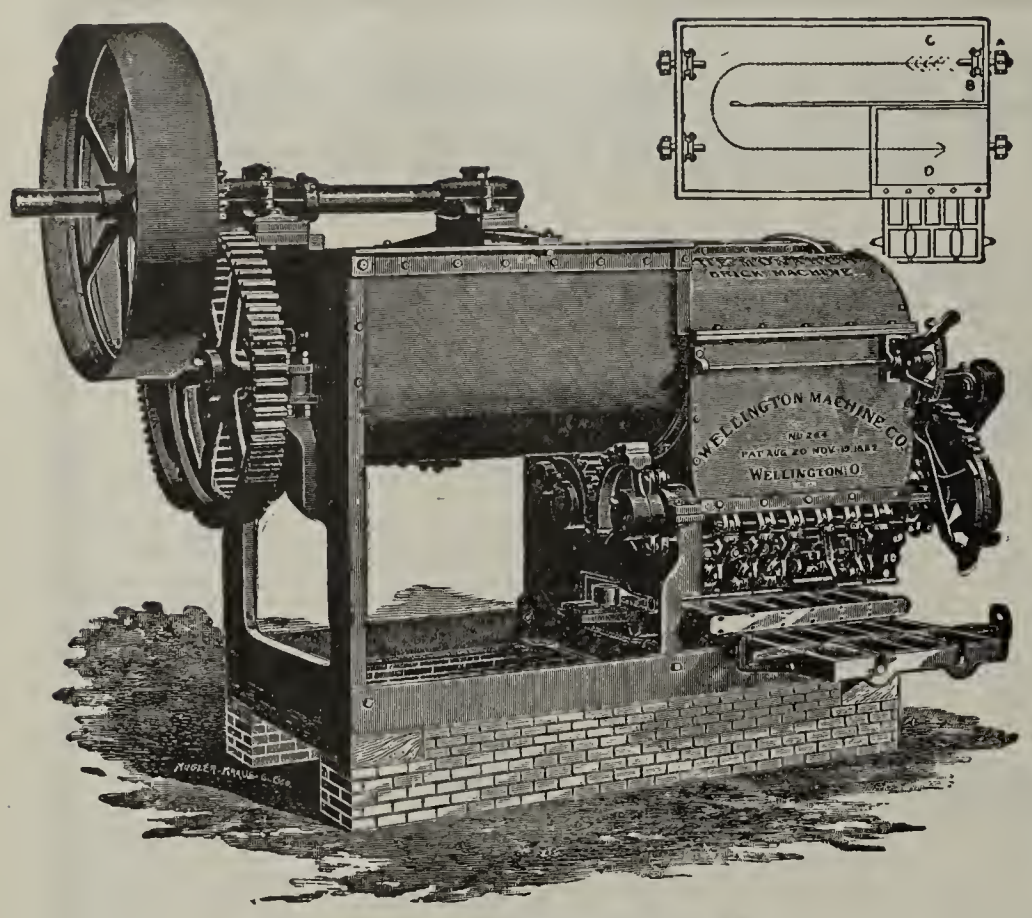

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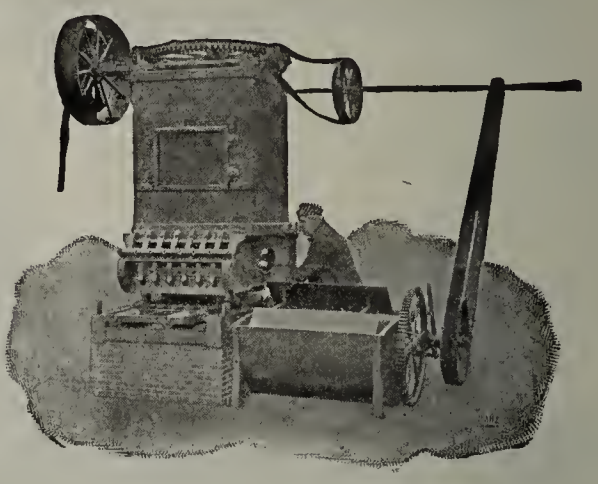

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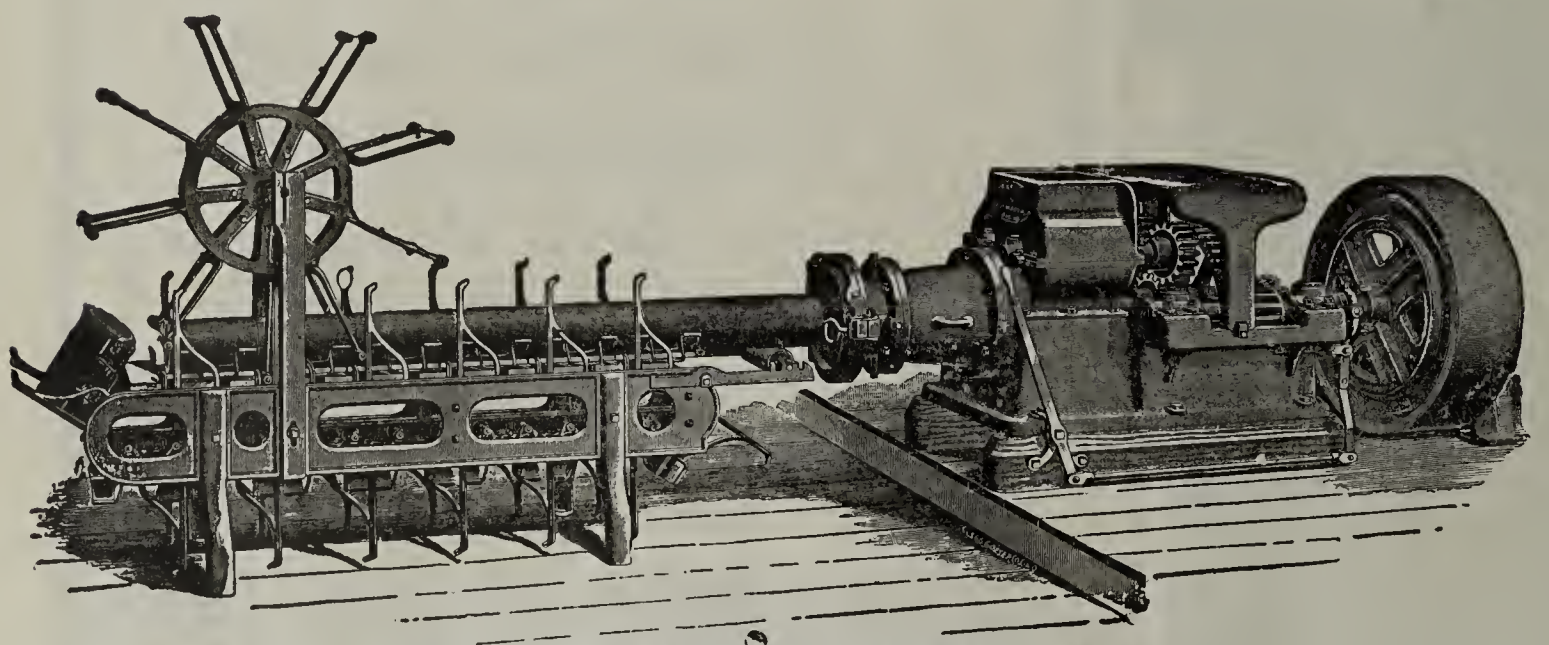

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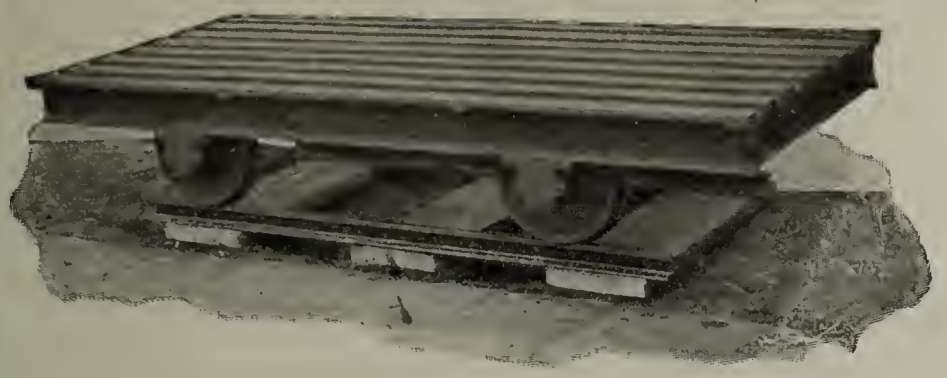

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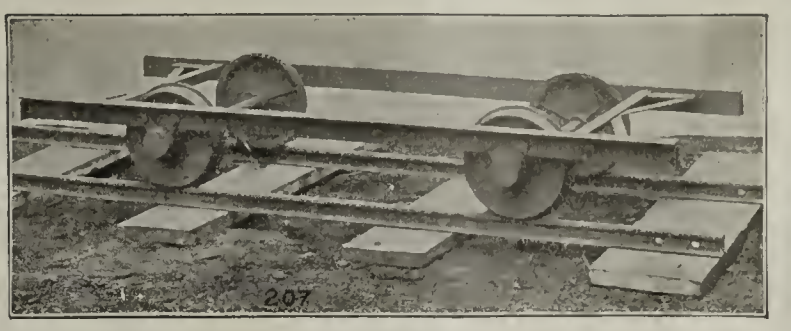

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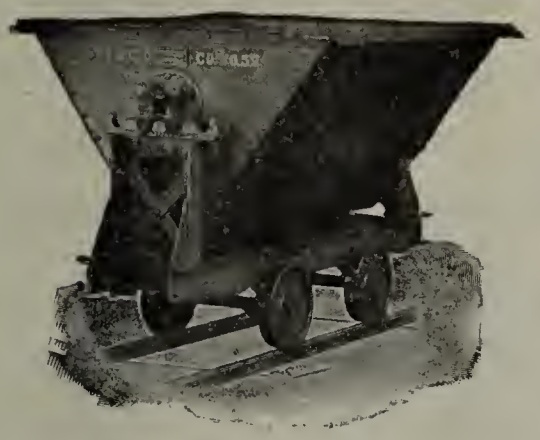

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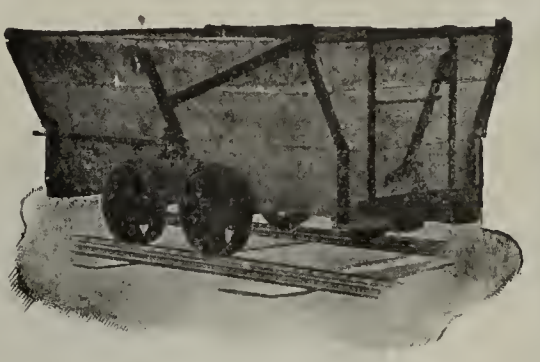

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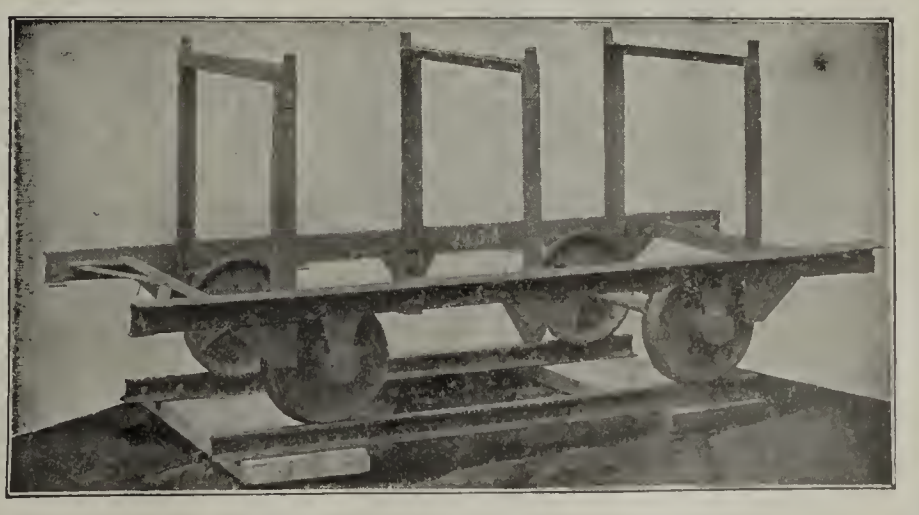

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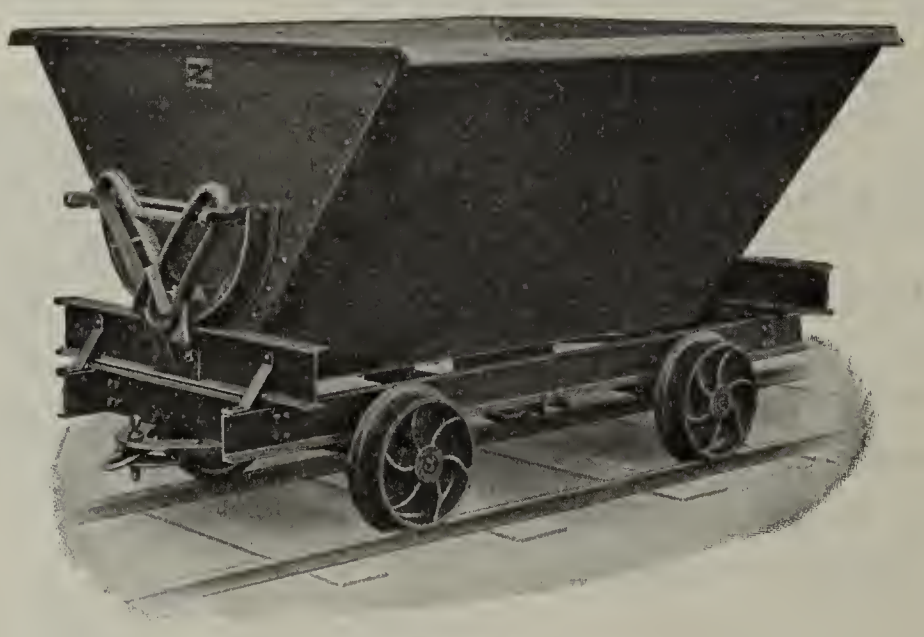

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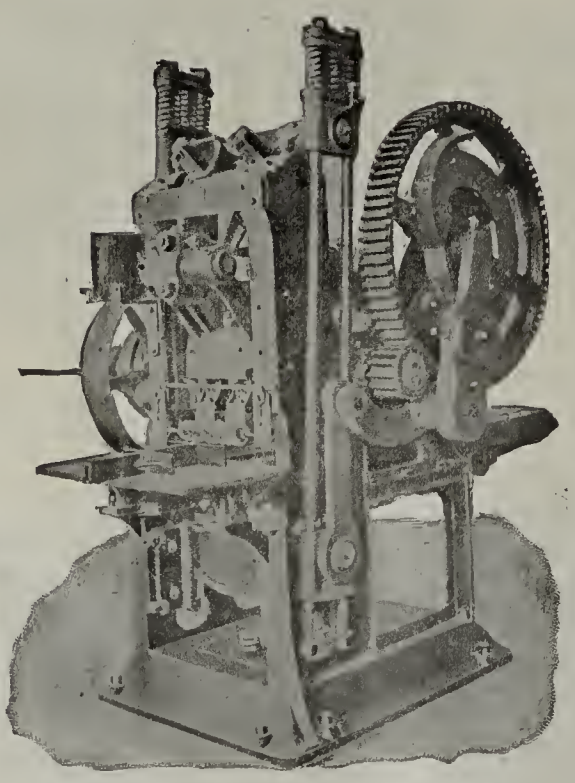

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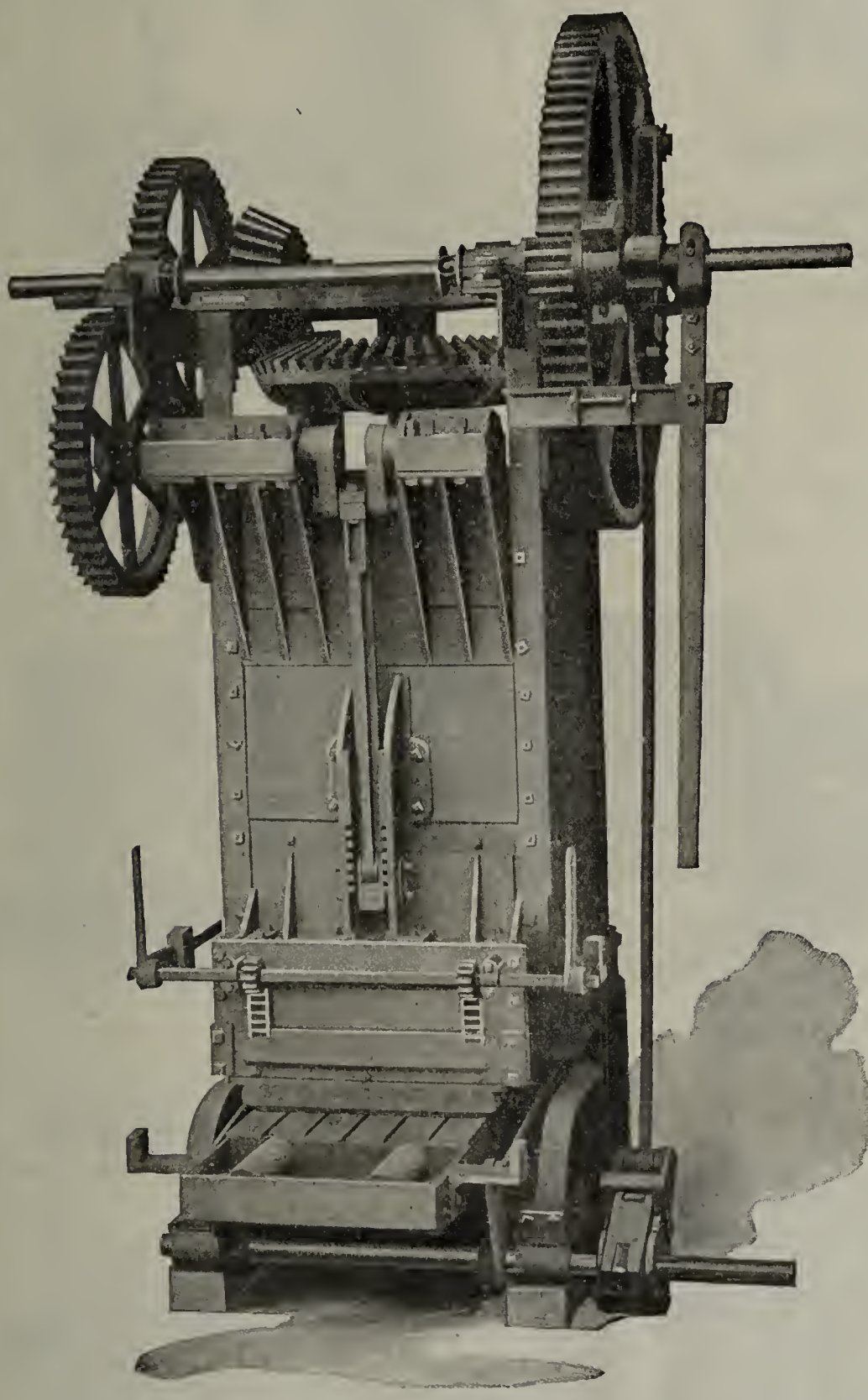

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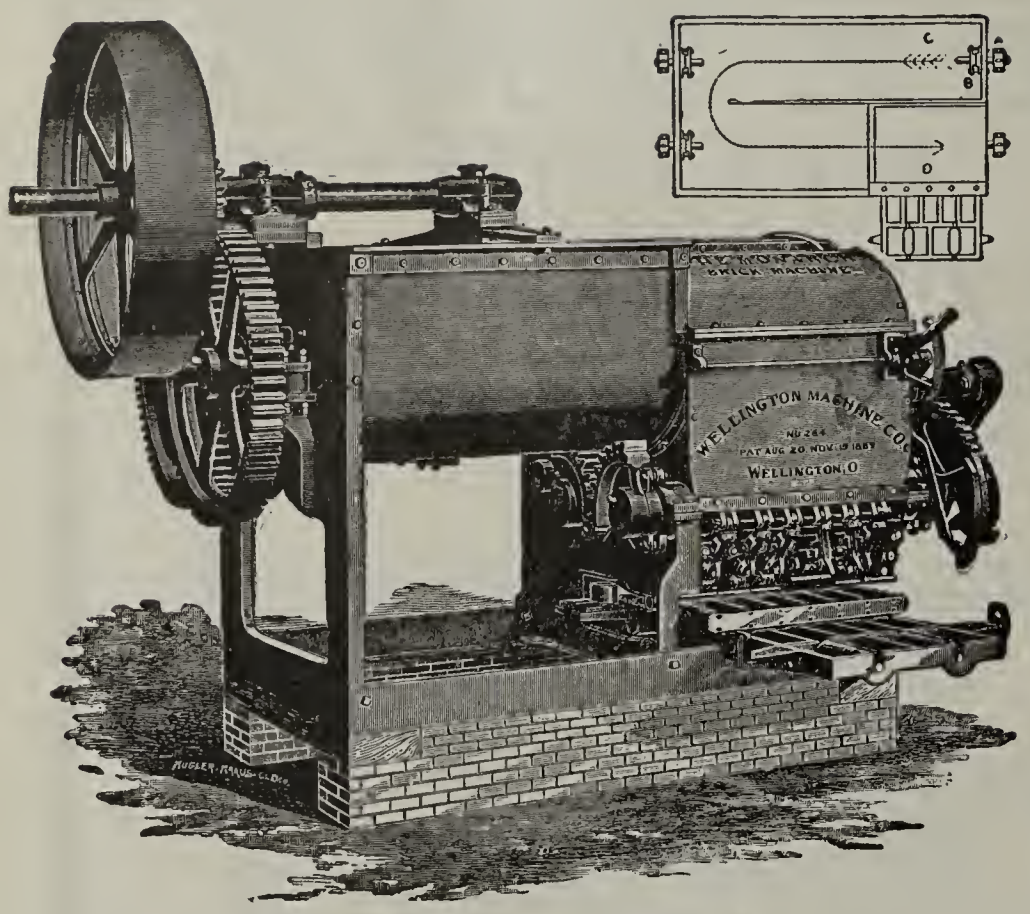

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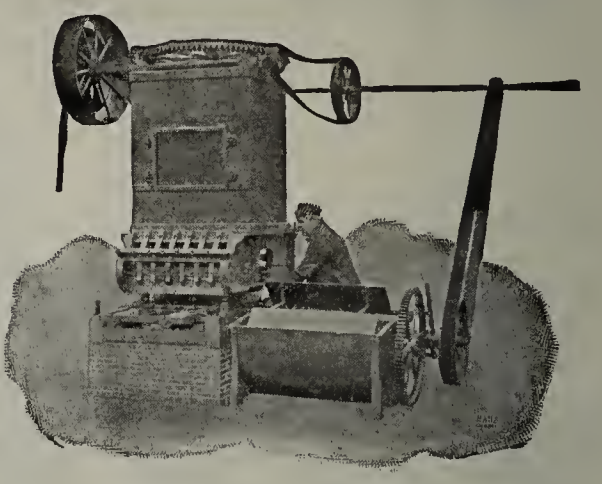

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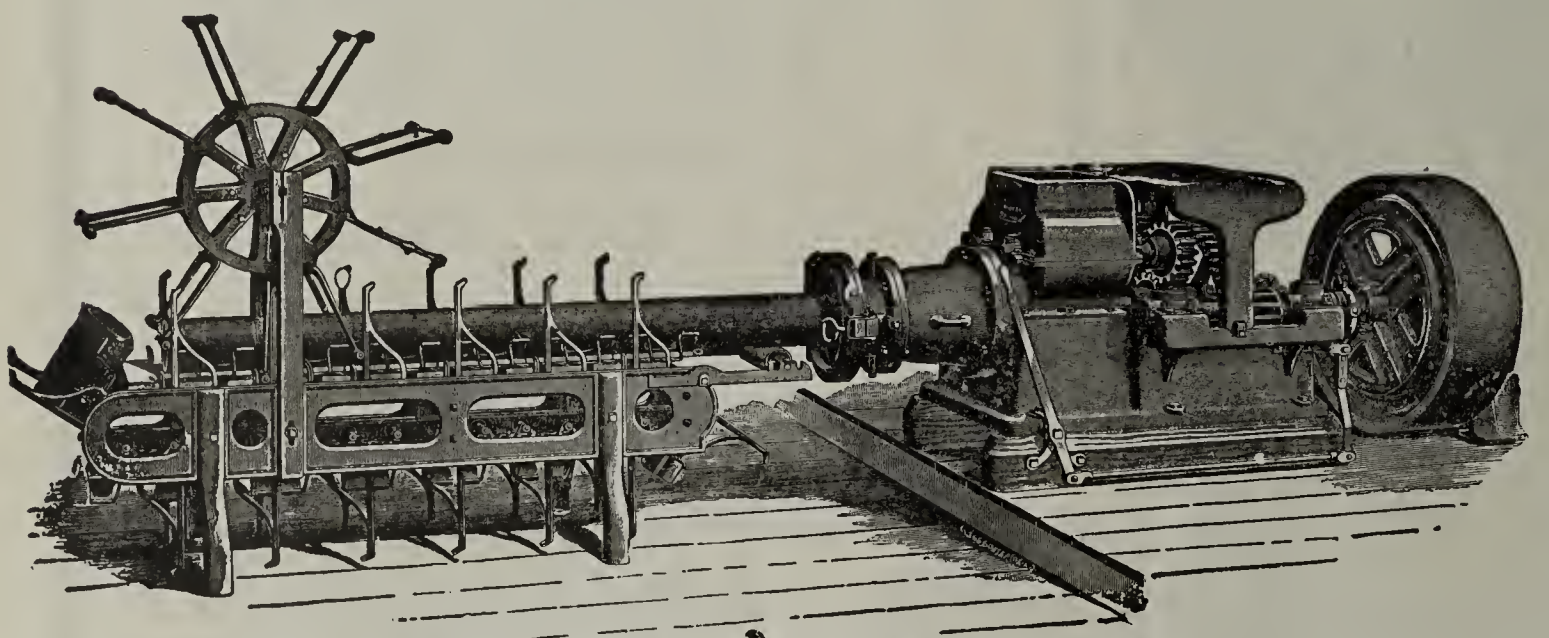

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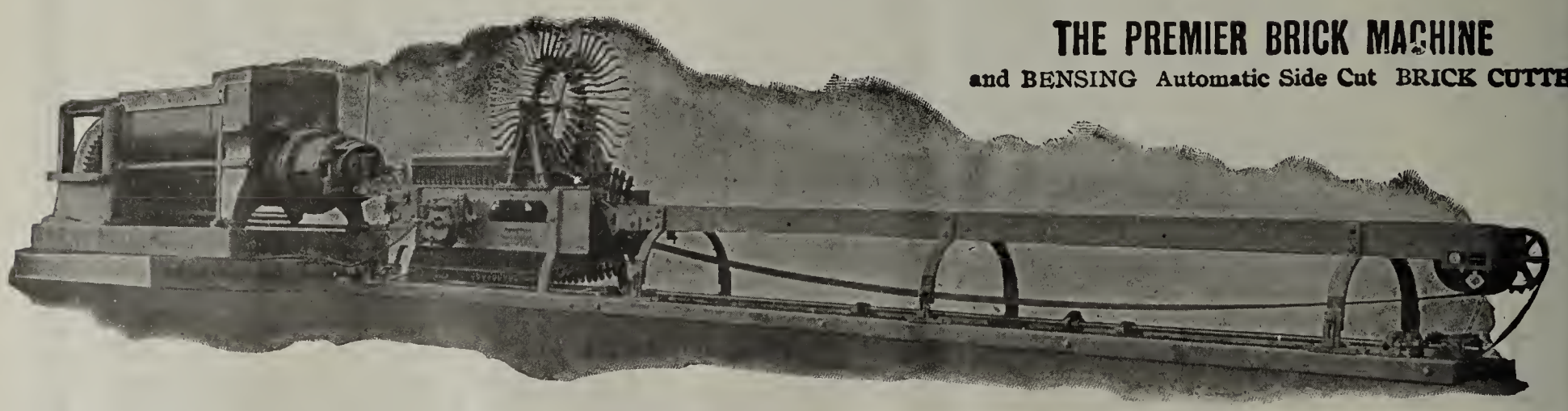

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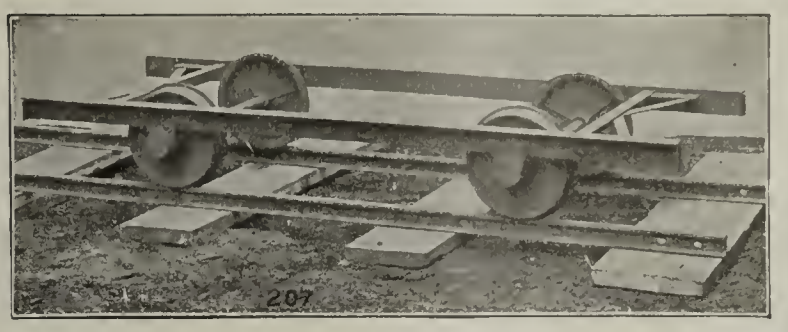

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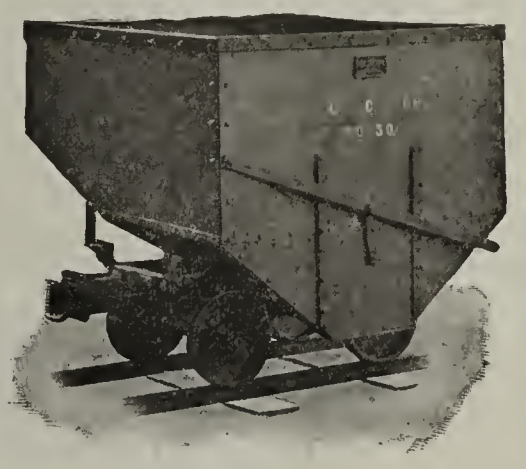

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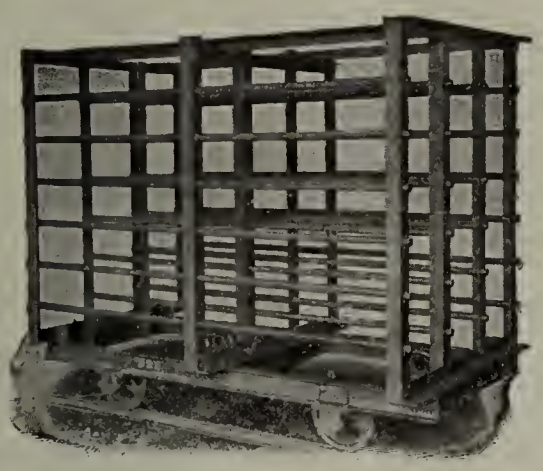

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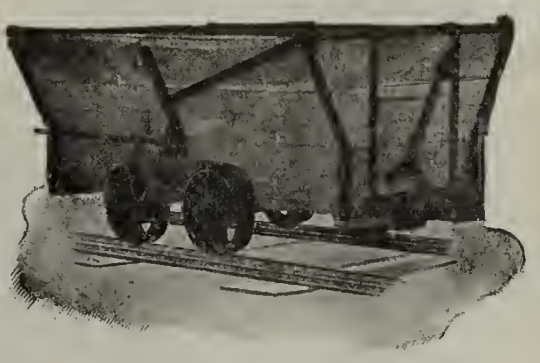

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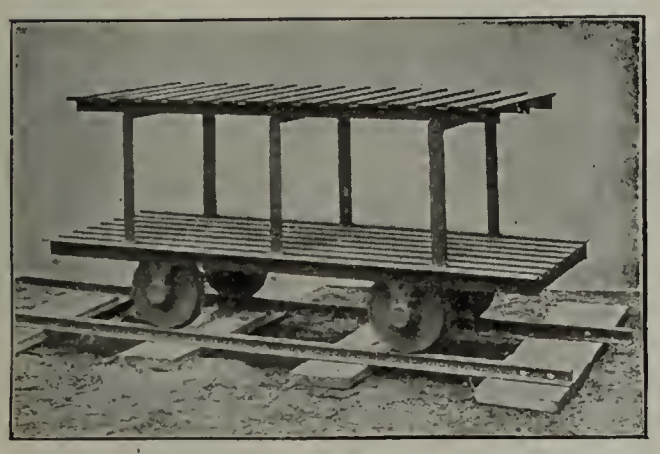

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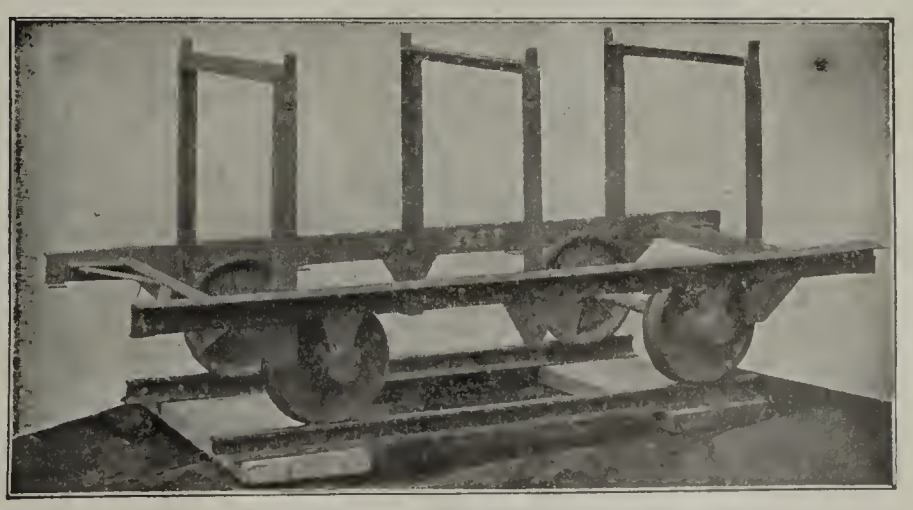

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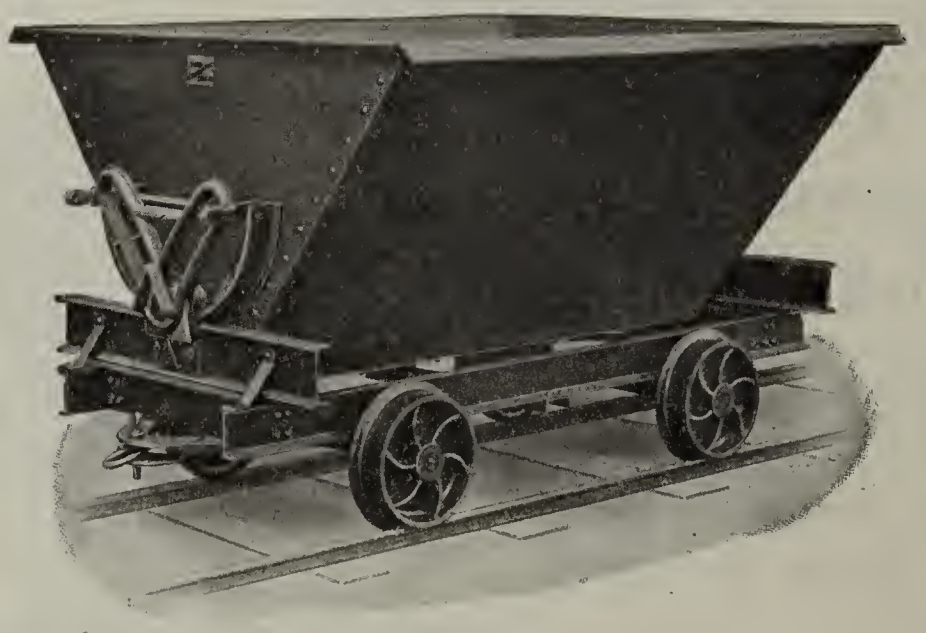

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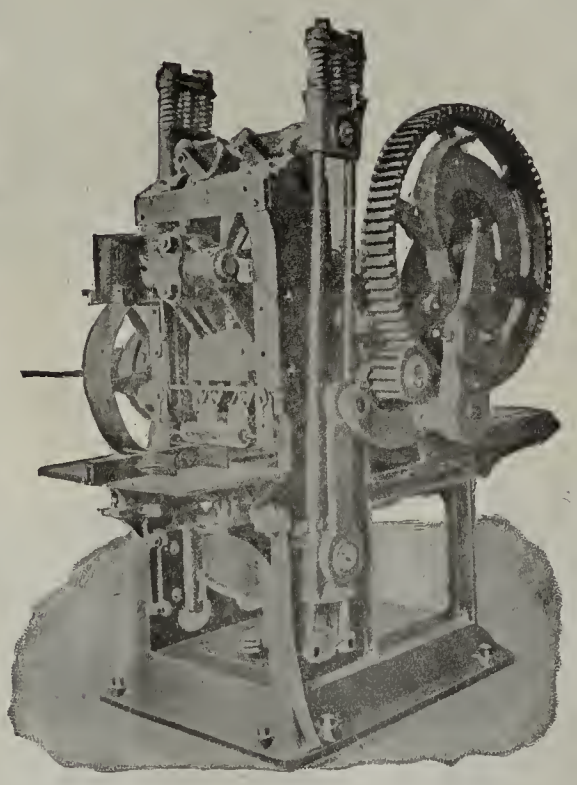

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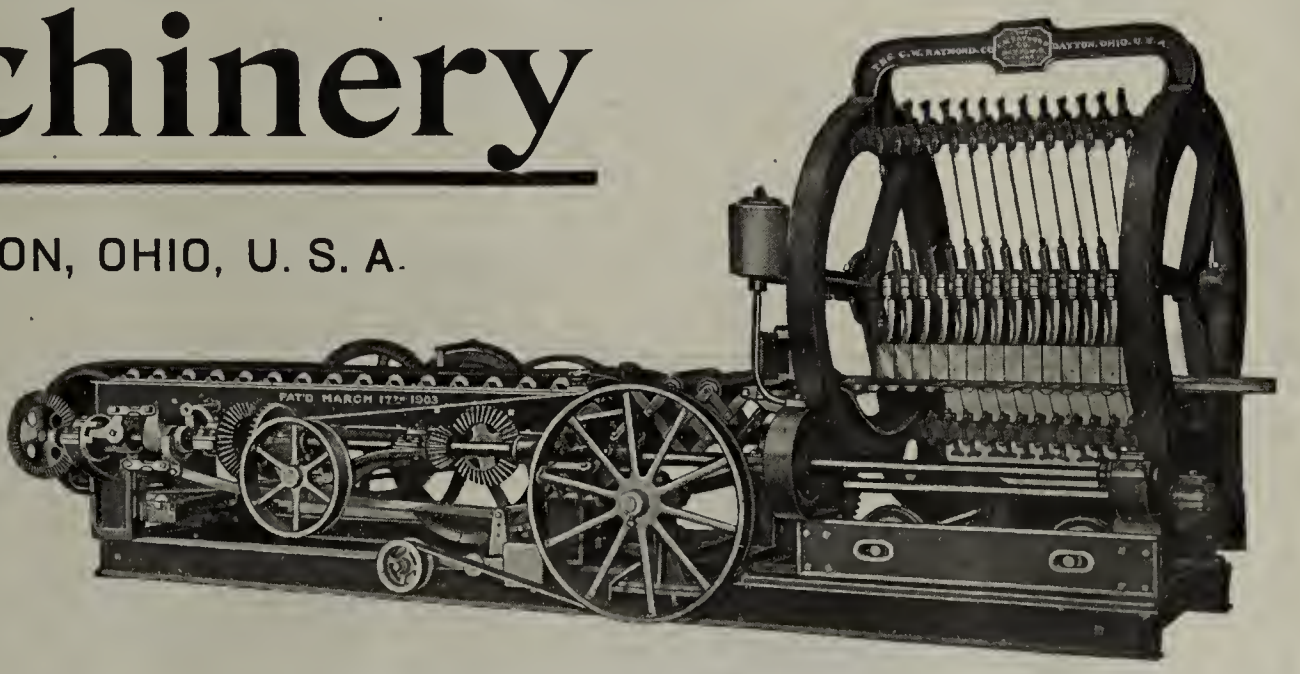

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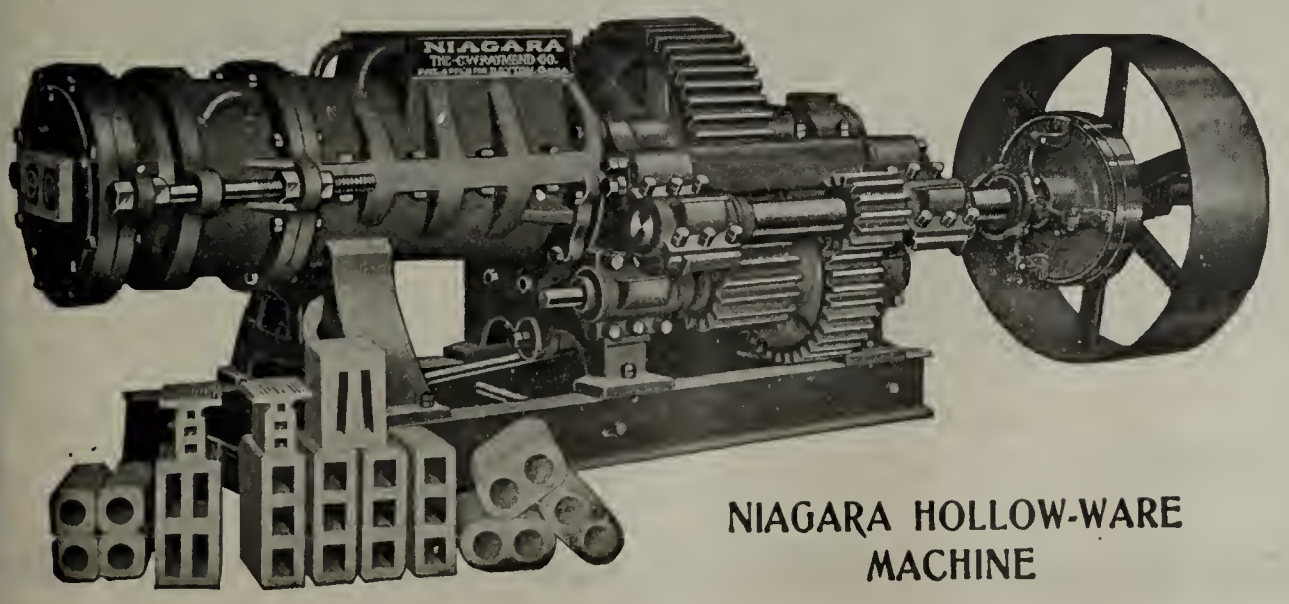

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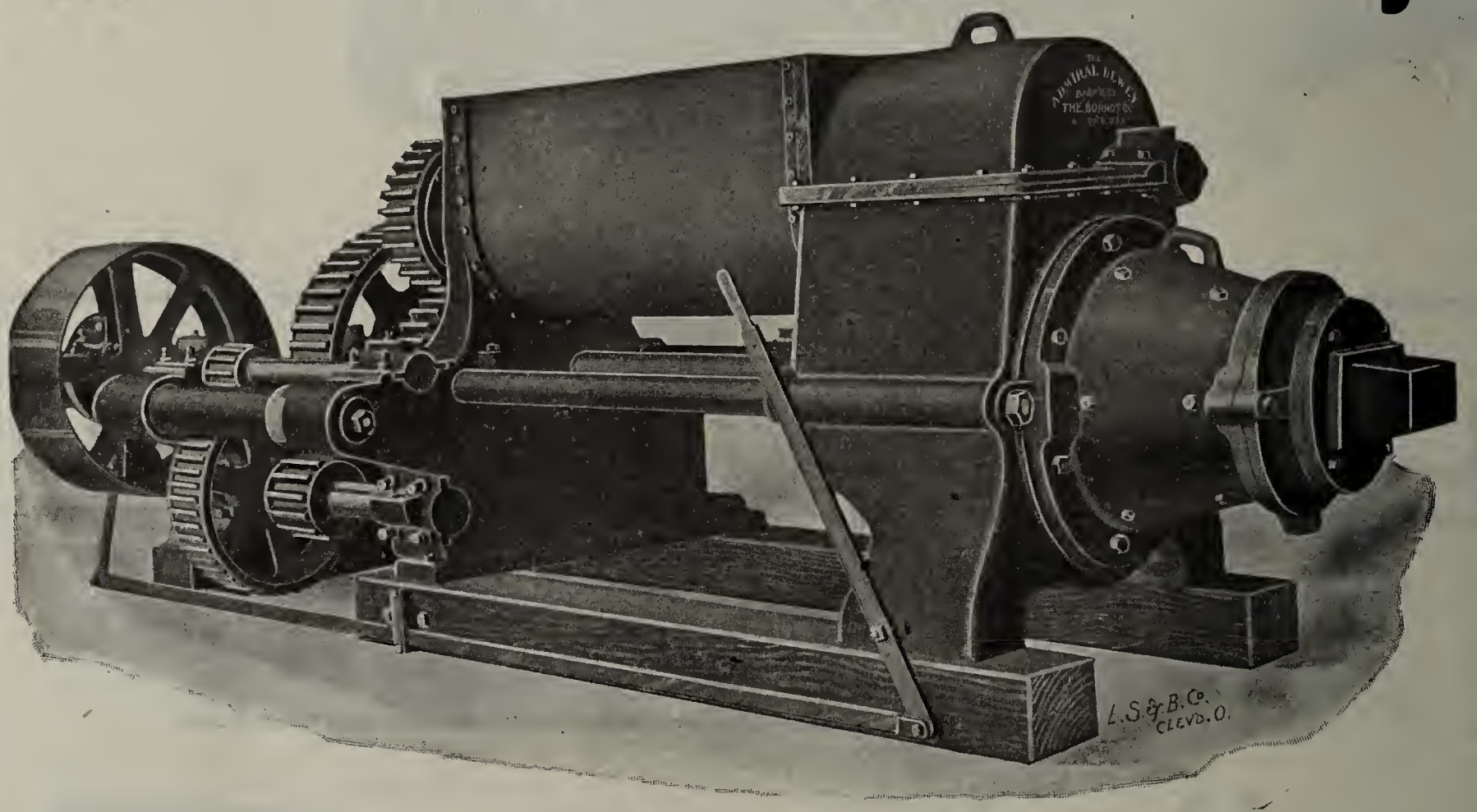

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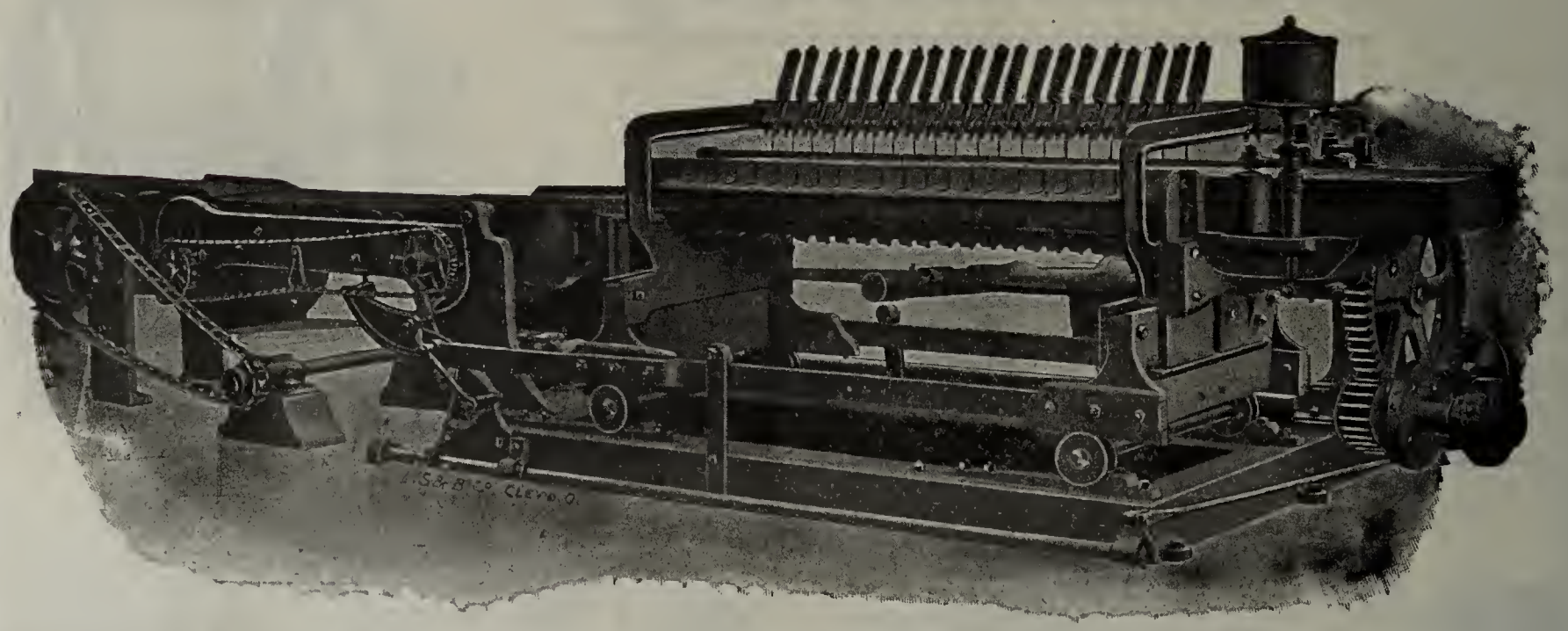

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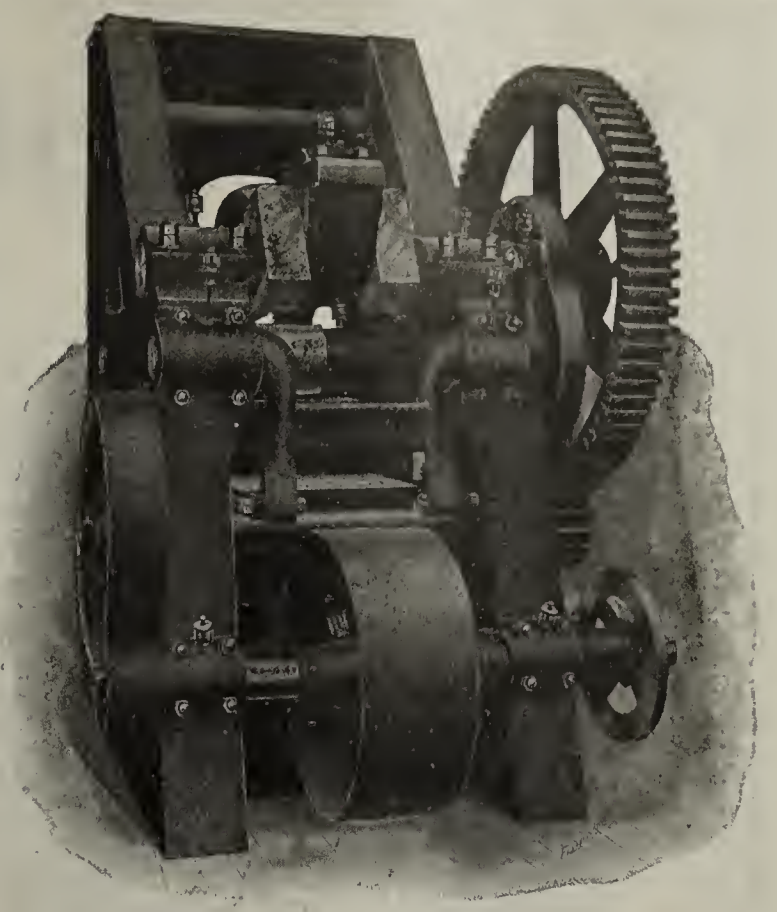

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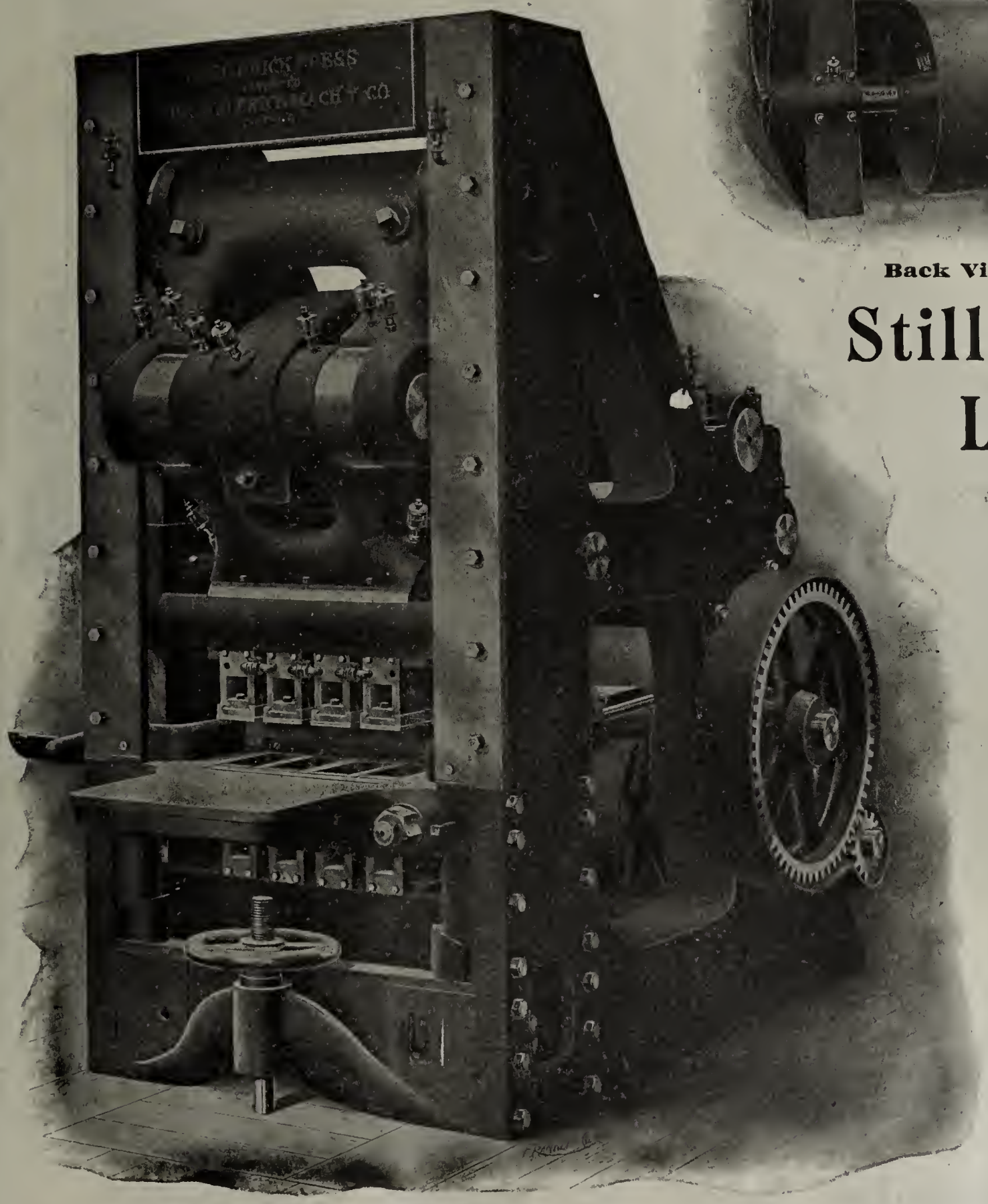

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CAPACITY	PER HOUR
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Three-Mold	1,500 brick
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Six-Mold	3,000 brick

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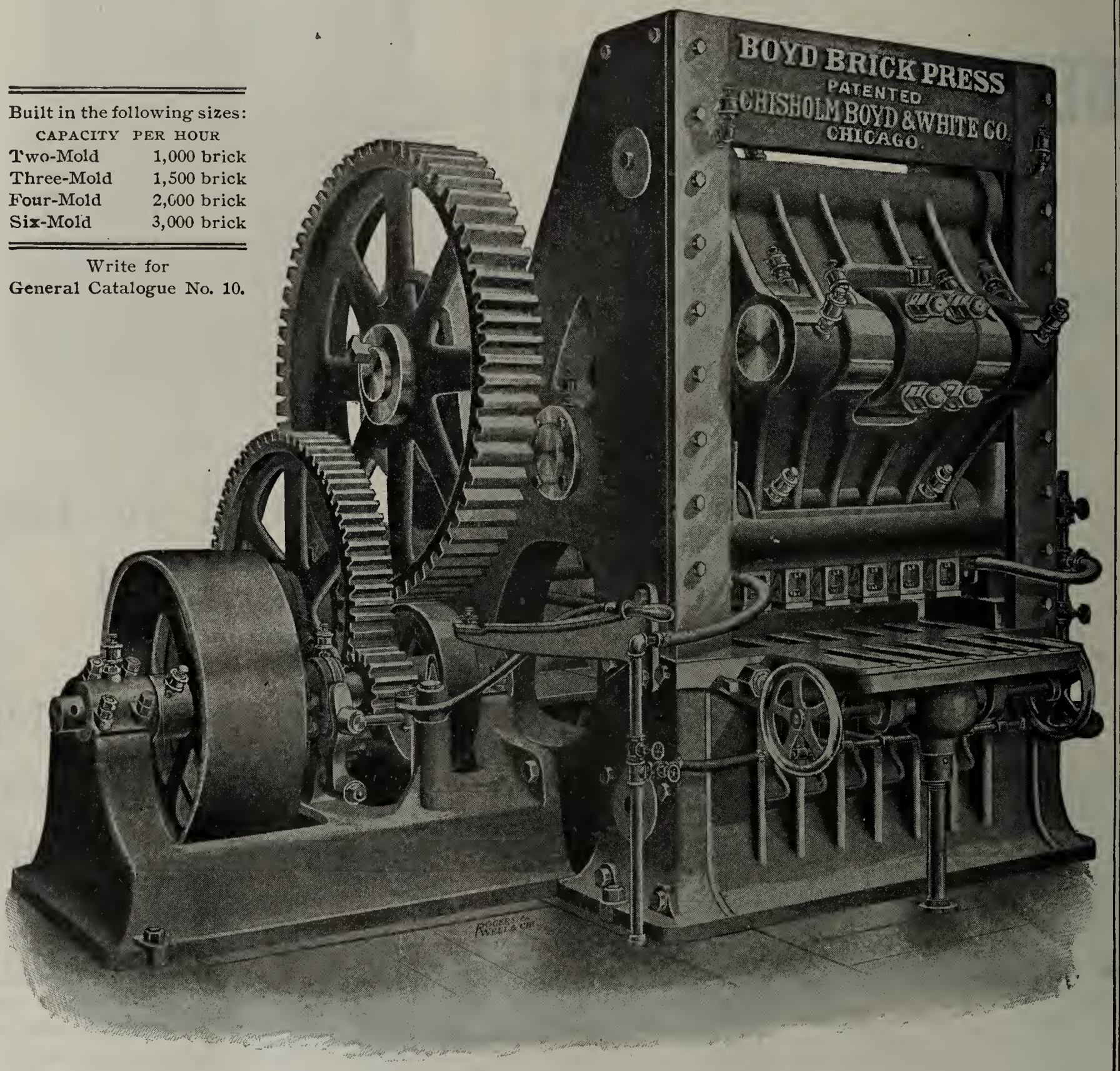

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THE BOYD PRESS has always been distinguished for originality in design and construction. It will make better brick from clay or shale than can be made from the same material by any other press. It is selected and purchased by the most progressive Brick Makers. The largest and most successful brick plants in the country are using Boyd Presses.

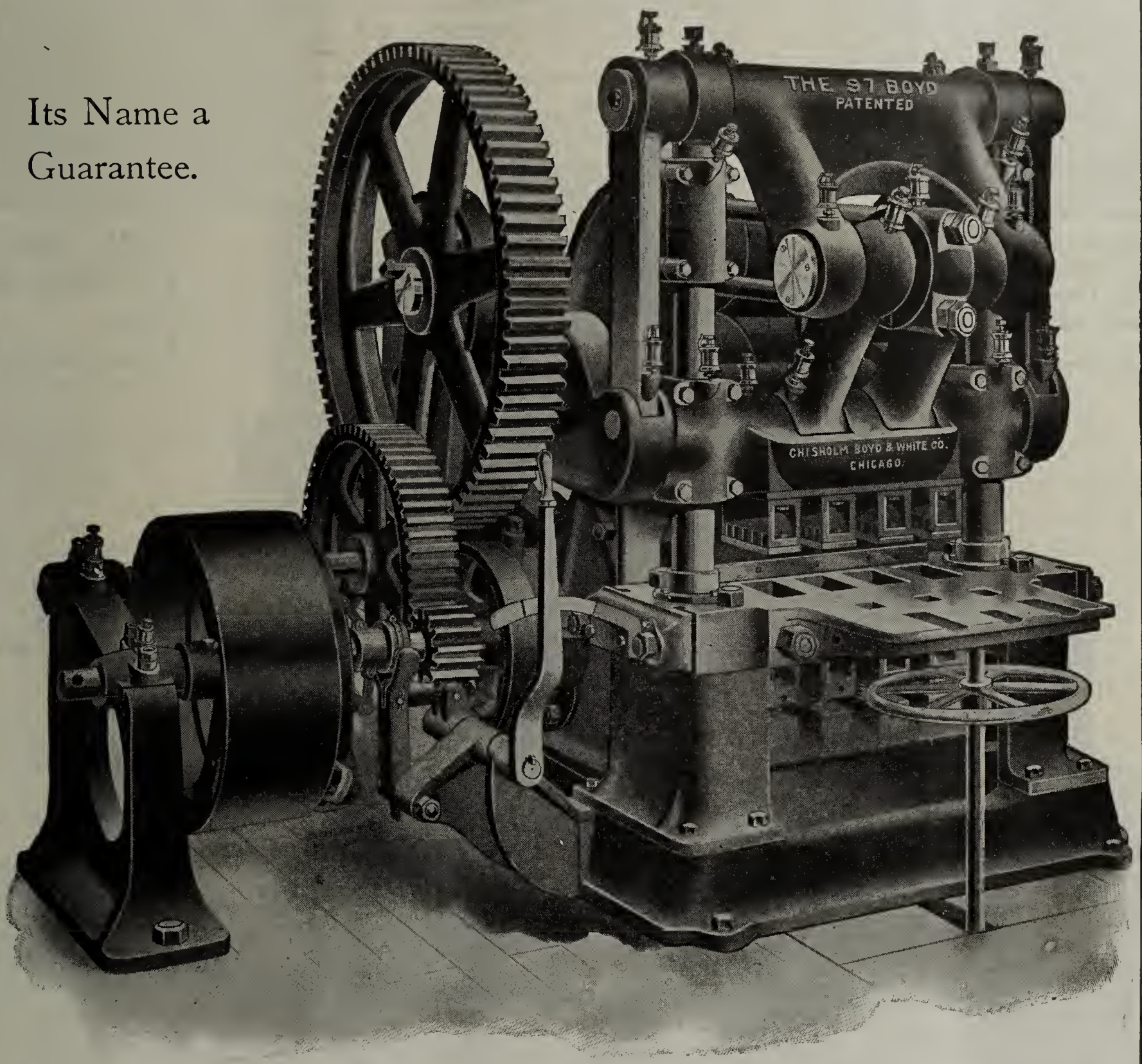
Chisholm, Boyd & White Company

Office and Works, 57th and Wallace Sts. **CHICAGO, ILL.**

The Boyd Brick Press

The '97 Model

Its Name a Guarantee.



THE '97 MODEL BOYD BRICK PRESS has enormous strength and great durability; it is compact; the adjustments are convenient; it operates quietly and smoothly; the workmanship and material are of the best; the design ingenious, and shows the most perfect application of scientific and mechanical principles to the art of brickmaking.

THE BOYD is the only Brick Press provided with an independent adjusting device for regulating the amount of clay in the molds and the pressure on the brick. This feature positively ensures equal pressure and finish on both sides of the brick, and no granulated or soft centers.

Sent on trial and fully guaranteed. Seventy presses of this pattern now in use. Cannot be broken in pressing brick. Write for descriptive catalogue No. 9.

Chisholm, Boyd & White Company

Office and Works, 57th and Wallace Sts. **CHICAGO, ILL.**

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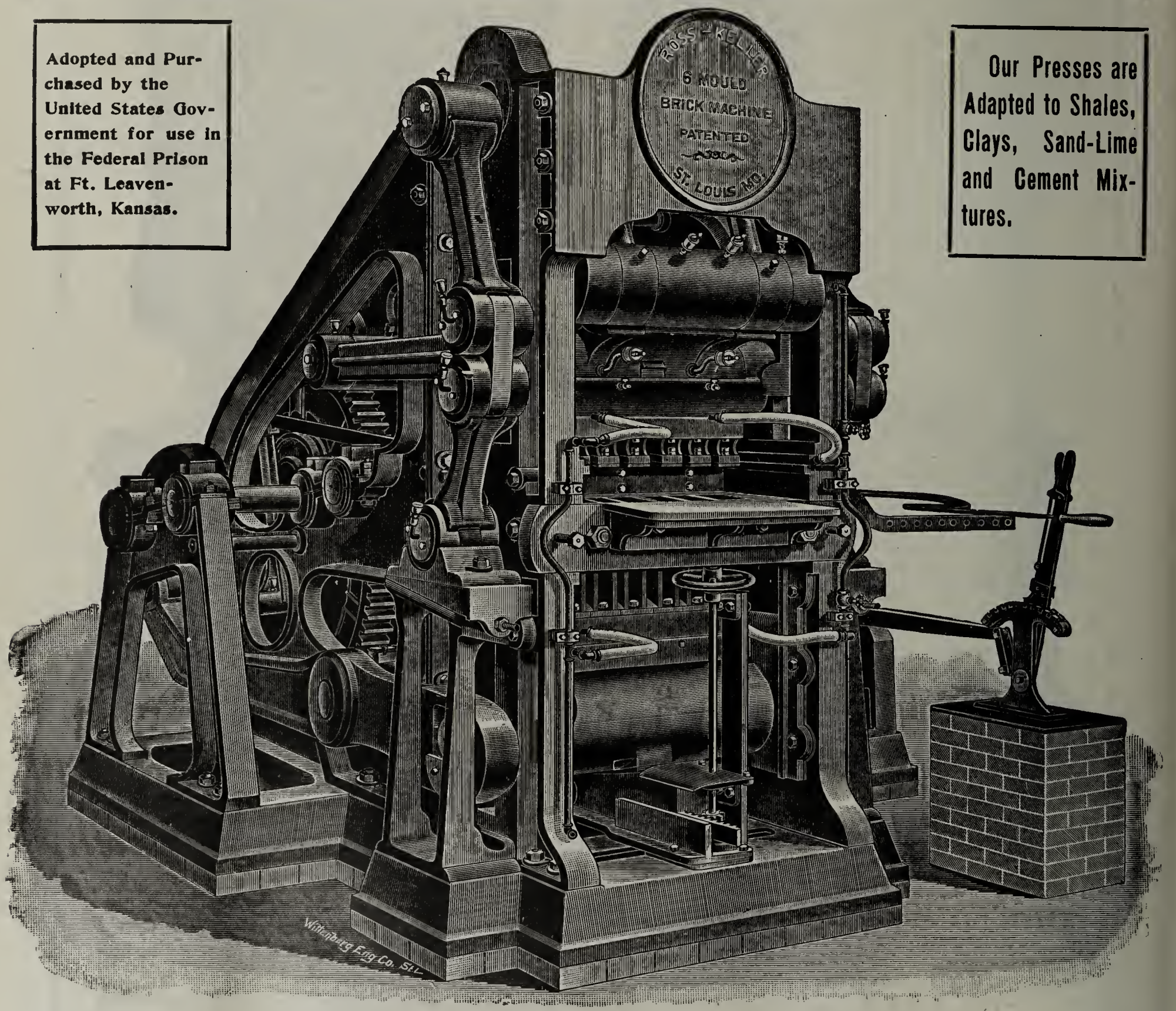
That we are building the best Sand-Lime Brick Plants being erected in this country to-day?

Have just completed and turned over to the purchasers a double Sand-Lime Plant, and made our guarantee good on the trial run. Machinery satisfactory. Product perfect. Everybody happy.

Let us tell you about our machinery, including our celebrated Ross-Keller Triple Pressure Brick Press, which has no equal for strength and efficiency.

Adopted and Purchased by the United States Government for use in the Federal Prison at Ft. Leavenworth, Kansas.



Our Presses are Adapted to Shales, Clays, Sand-Lime and Cement Mixtures.

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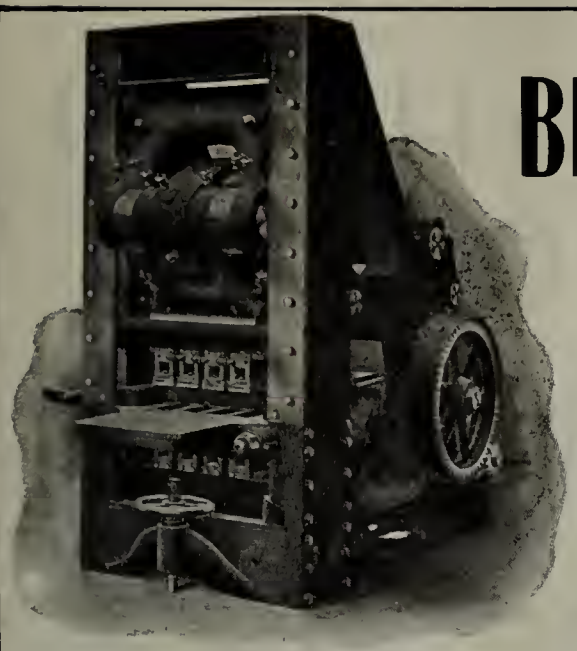
Ross-Keller Triple Pressure Brick Machine Co.

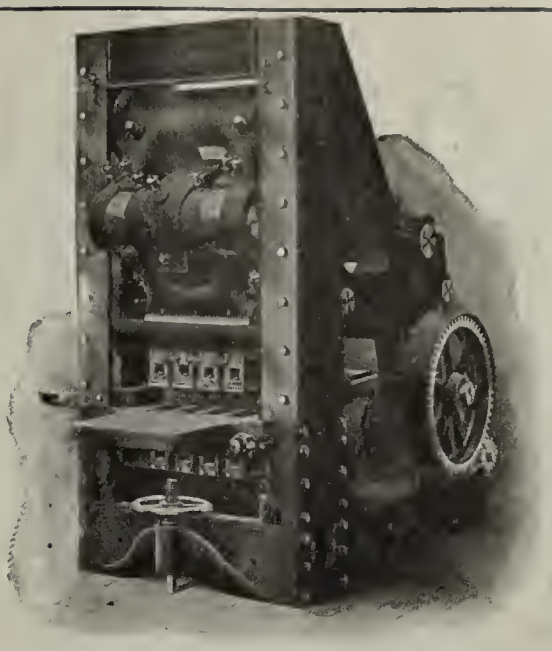
GEO. M. McDOWELL, Sales Agent
for Pacific Coast, Portland, Ore.

FULLERTON BUILDING, ST. LOUIS, MO., U. S. A.

BERG BRICK PRESS

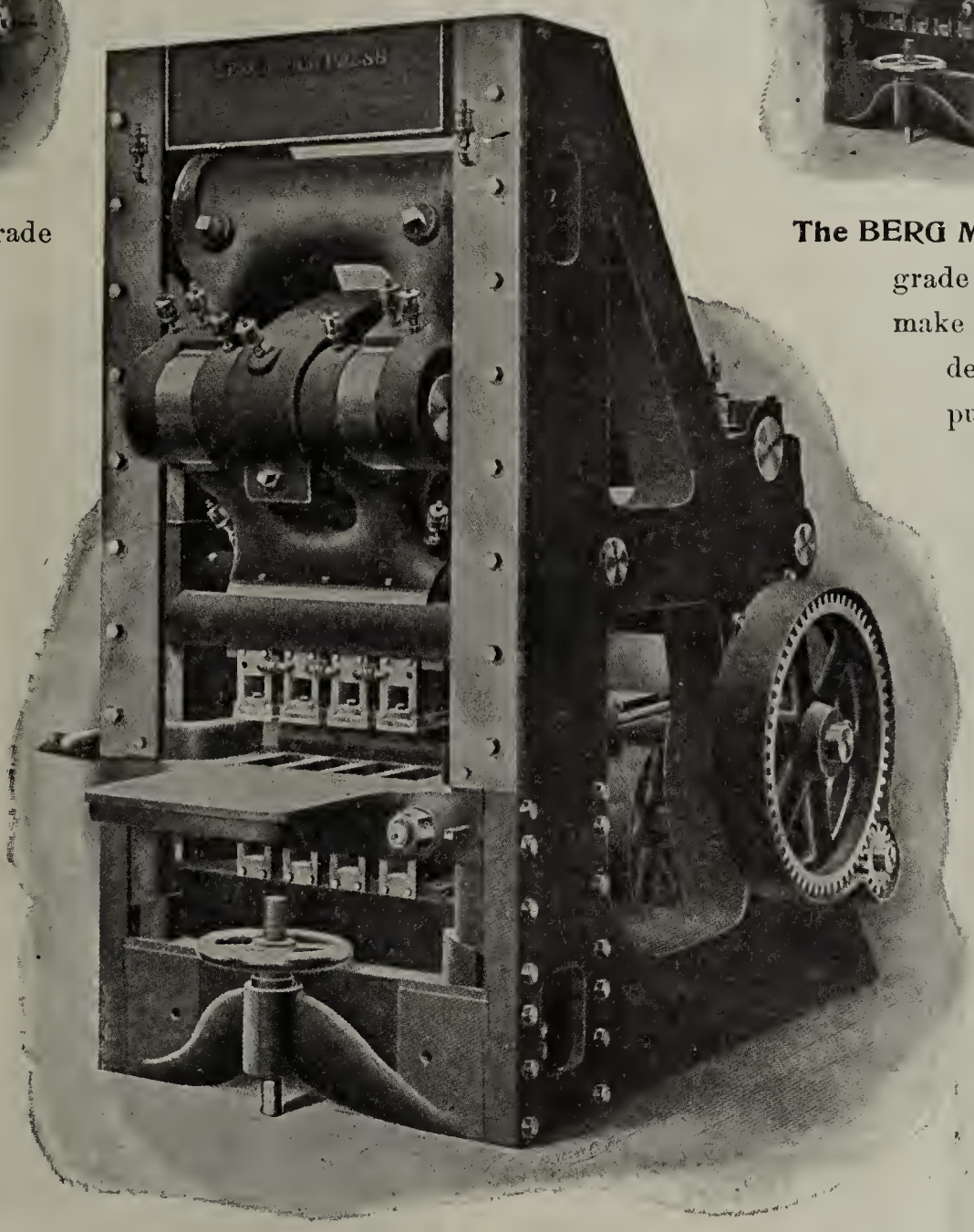
The highest development of the Art of Brickmaking Machinery so pronounced by the United States Government.





The BERG for the highest grade of pressed brick of shale or clay. It makes all kinds of shapes and sizes of brick. Changes from one shape to another can be made in less than an hour's time.

The BERG MAKES the highest grade of fire brick. Can make all kinds of shapes desired for fire-brick purposes.



First-Class Workmanship. Cut Gearing. Fully Warranted.

Three distinct pressures make the brick evenly pressed all through. No granulated centers of the brick.

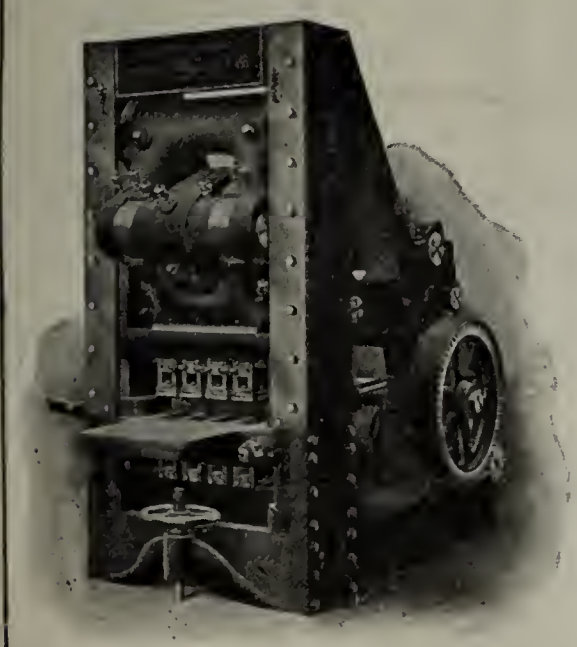
The BERG makes the best sand-lime brick and cheapest because it is the strongest machine and gives the highest pressure. Thirty-five sand-lime plants in United States use the **BERG** Brick Press SUCCESSFULLY.

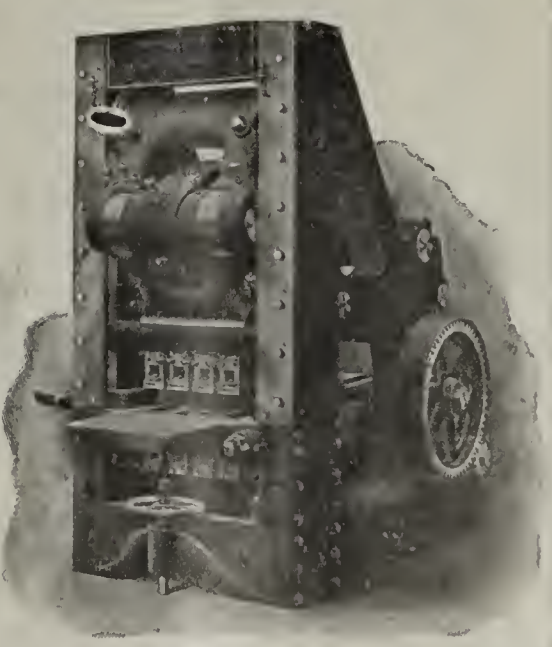
The BERG is the best for sand and cement because of its strong pressure. Uses less cement, makes cheaper brick.

The 1905 Berg Press

Many other steps further forward in improvement and highest grade of material and workmanship, also cut gearing. Fully guaranteed as to its success. Manufactured by its inventor in Toronto, Canada, at the Bertram Engine Works Co. Plans and specifications on the different kinds of plants furnished, also all equipments.

For prices and full particulars, address





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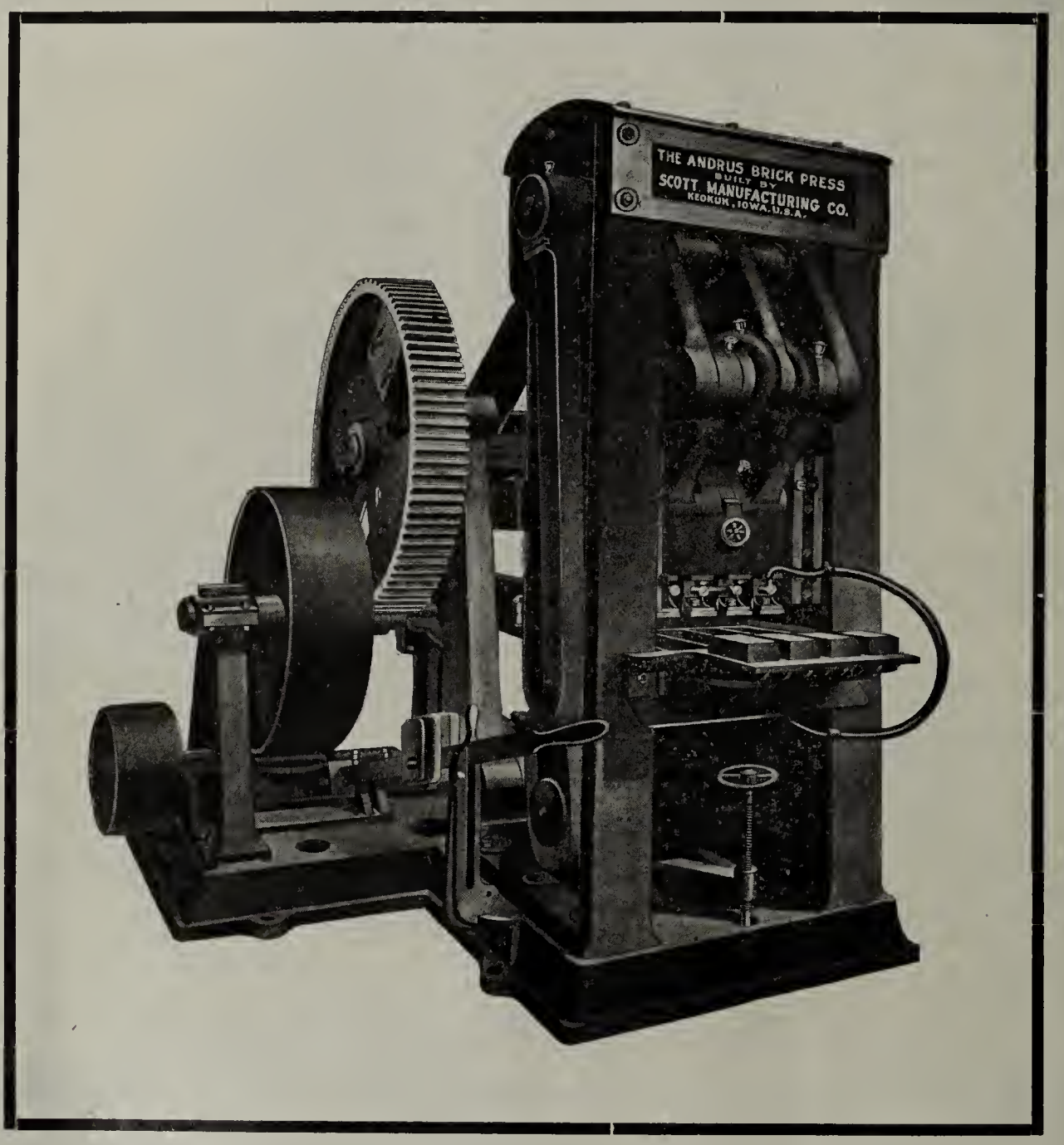

"Makes brick every day" because it never takes time to lay up for repairs

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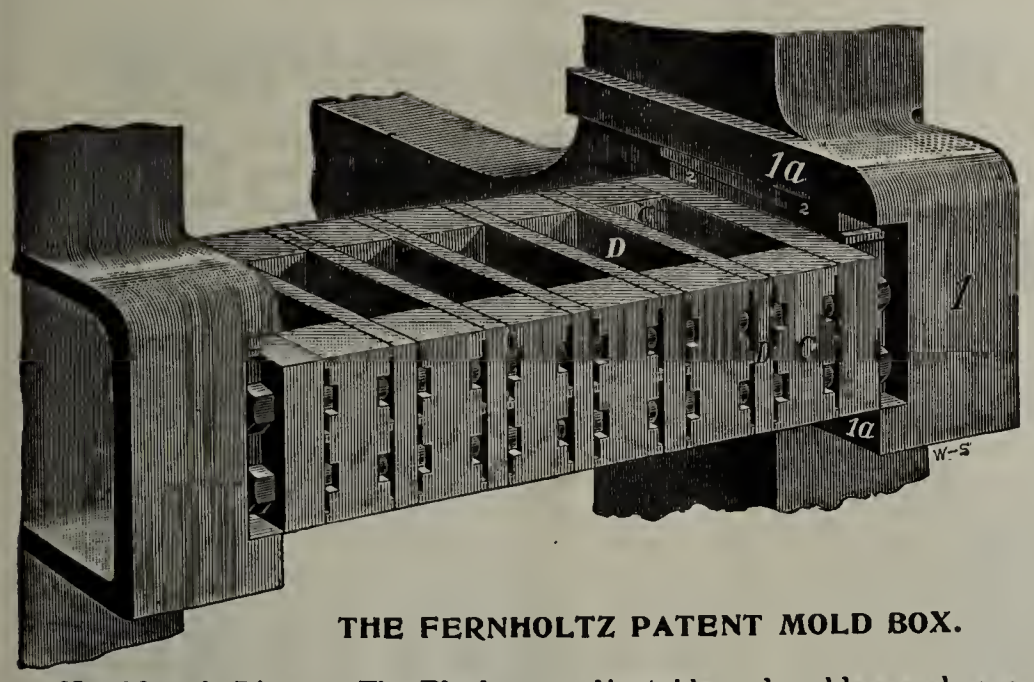
Manufacturers of

The Celebrated Fernholtz Dry Press

Four mold Press 20,000 daily capacity. Six mold Press 30,000 daily capacity



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No old style Liners. The Blocks are adjustable and molds are always one size. We have put them in most all makes of Dry Press machines. Easily and quickly adjusted. They are made entirely out of chilled iron, the hardest known metal.

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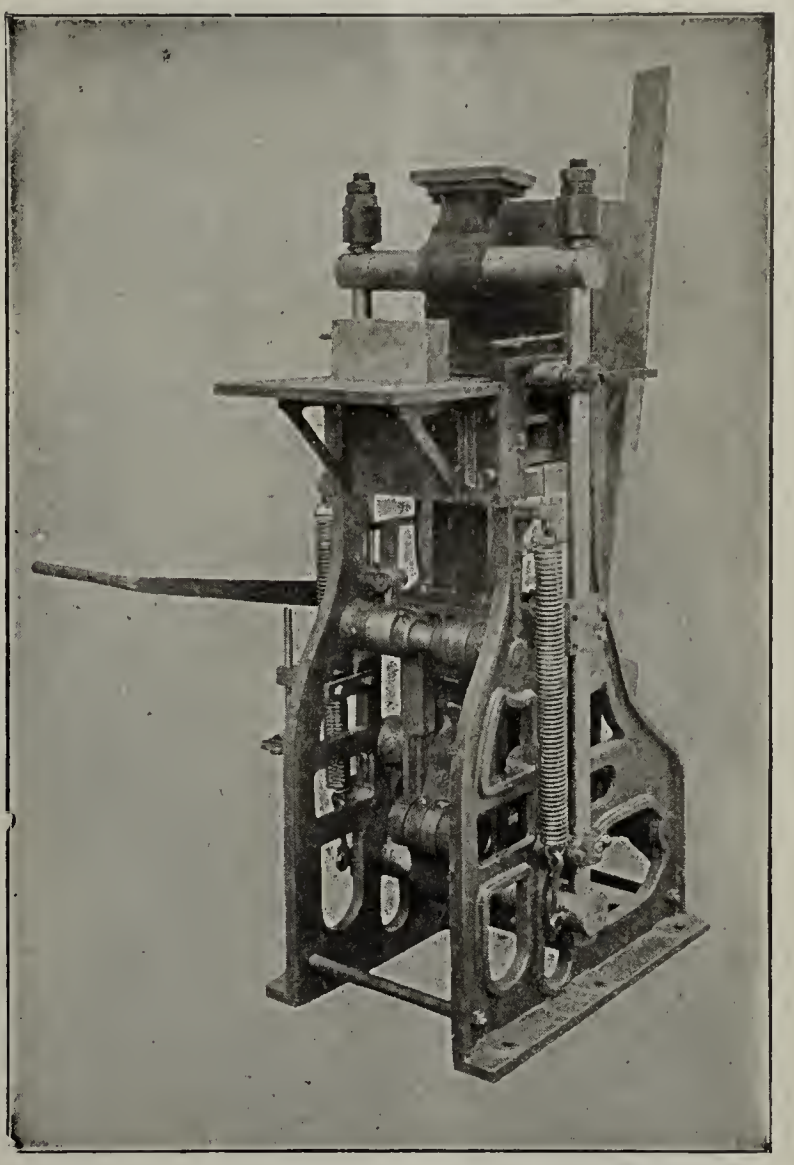
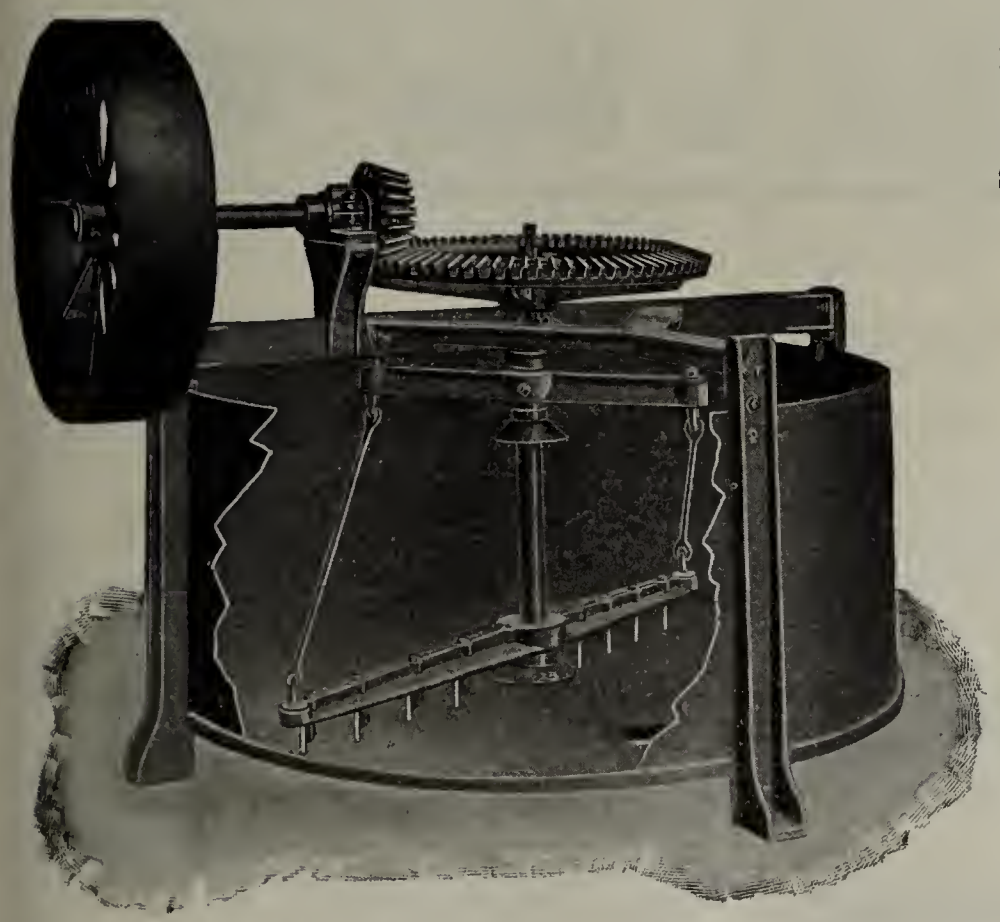
Especially adapted for ornamental designs. Any size brick up to 12⅝ inches long, 10 inches wide and 4¼ inches thick.

Brick set into kiln direct from press.



GRATH PATENT HAND POWER PRESS.



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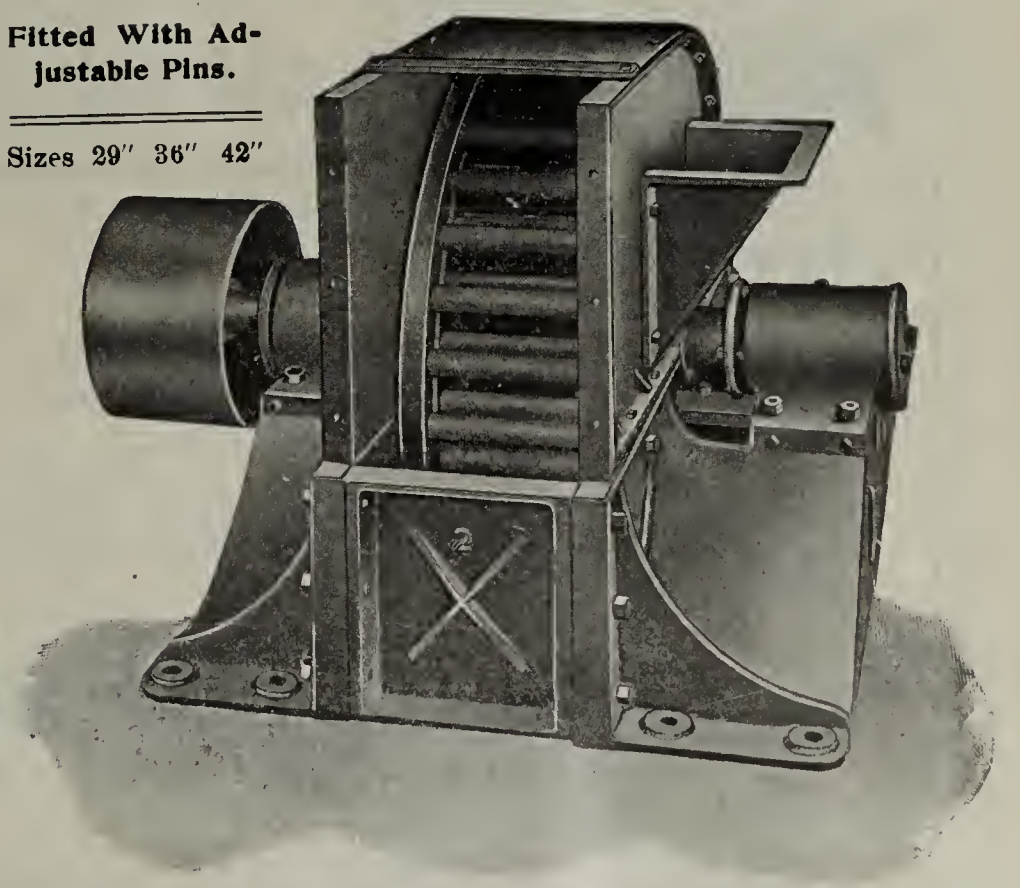

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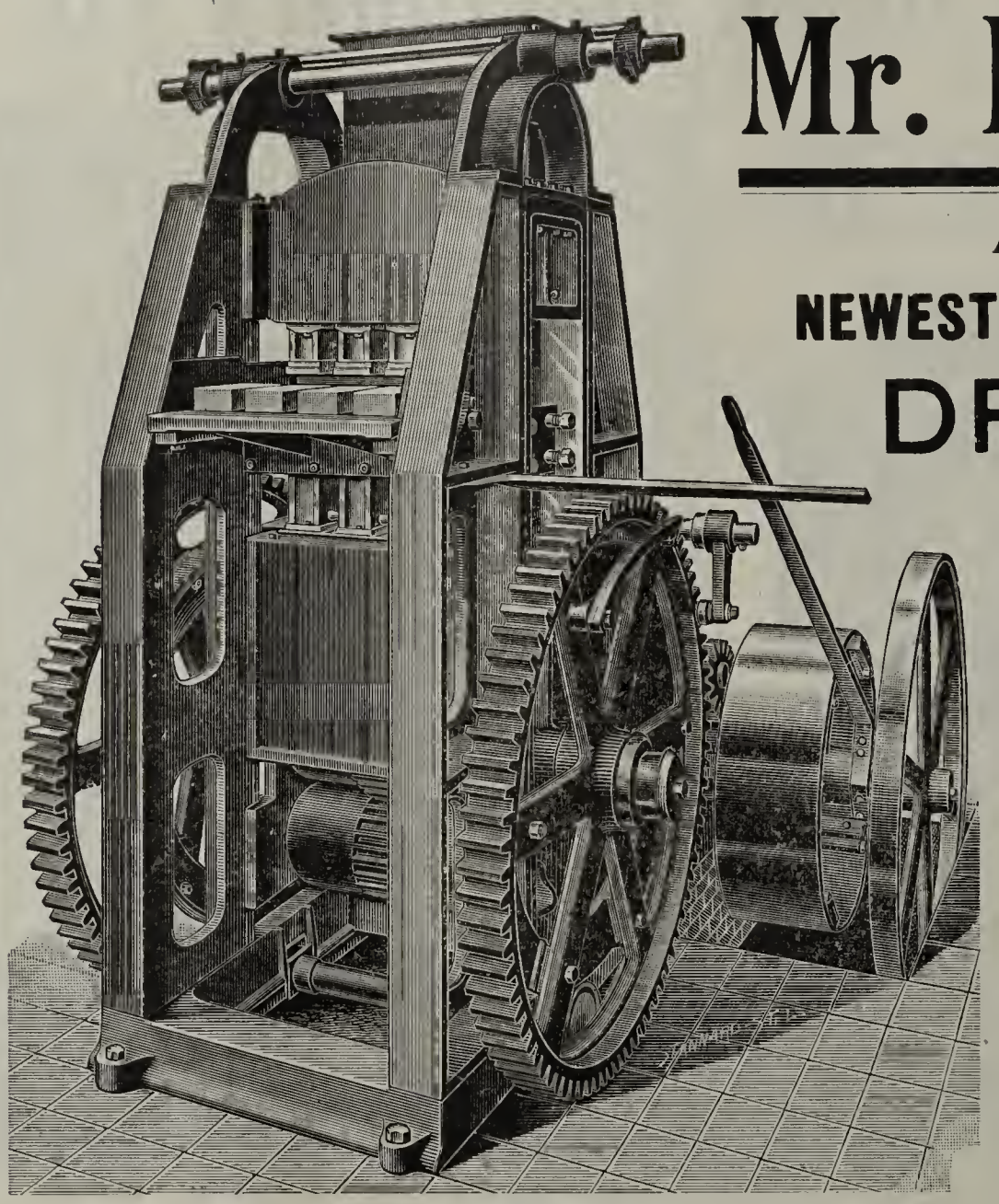

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Are you looking for the

NEWEST, BEST AND CHEAPEST IN

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If so, you cannot afford to overlook the strong points of excellence and the remarkable **simplicity, strength** and **efficiency** fonnd in

THE RELIANCE

"The Machine with a Future"

Radical departure from old principles.

Unique in construction, sound in principle, unrivaled in attainment!

Makes not only Brick but Money

A FEW POINTS:

1. Weight and Floor Space about one-half that of any other Brick Machine.
2. Compression of Clay Perfect and Uniform. (Entirely new Principle).
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EMINENTLY PRACTICAL AND ECONOMICAL

WRITE TO-DAY FOR PARTICULARS. SEND CLAY FOR SAMPLE BRICKS.

Made By the

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MACHINERY FOR BUILDING BRICK
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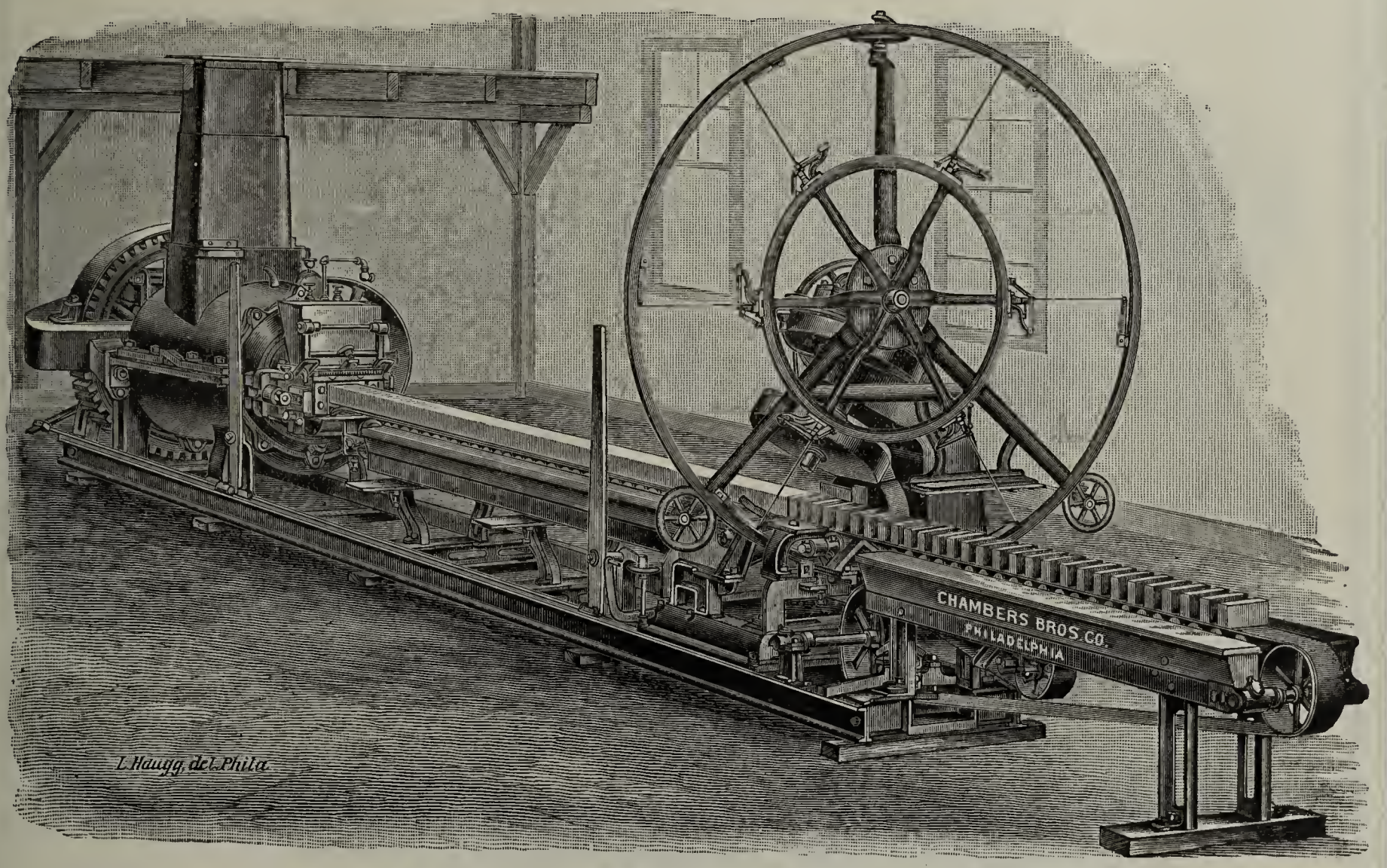
ROUND CORNER PAVING BRICK WITHOUT REPRESSING



THE CHAMBERS AUTOMATIC SIDE-CUT BRICK MACHINE.

Automatic End Cut Brick Machines of five sizes, having capacity from 10,000 to over 100,000 brick daily under favorable conditions.

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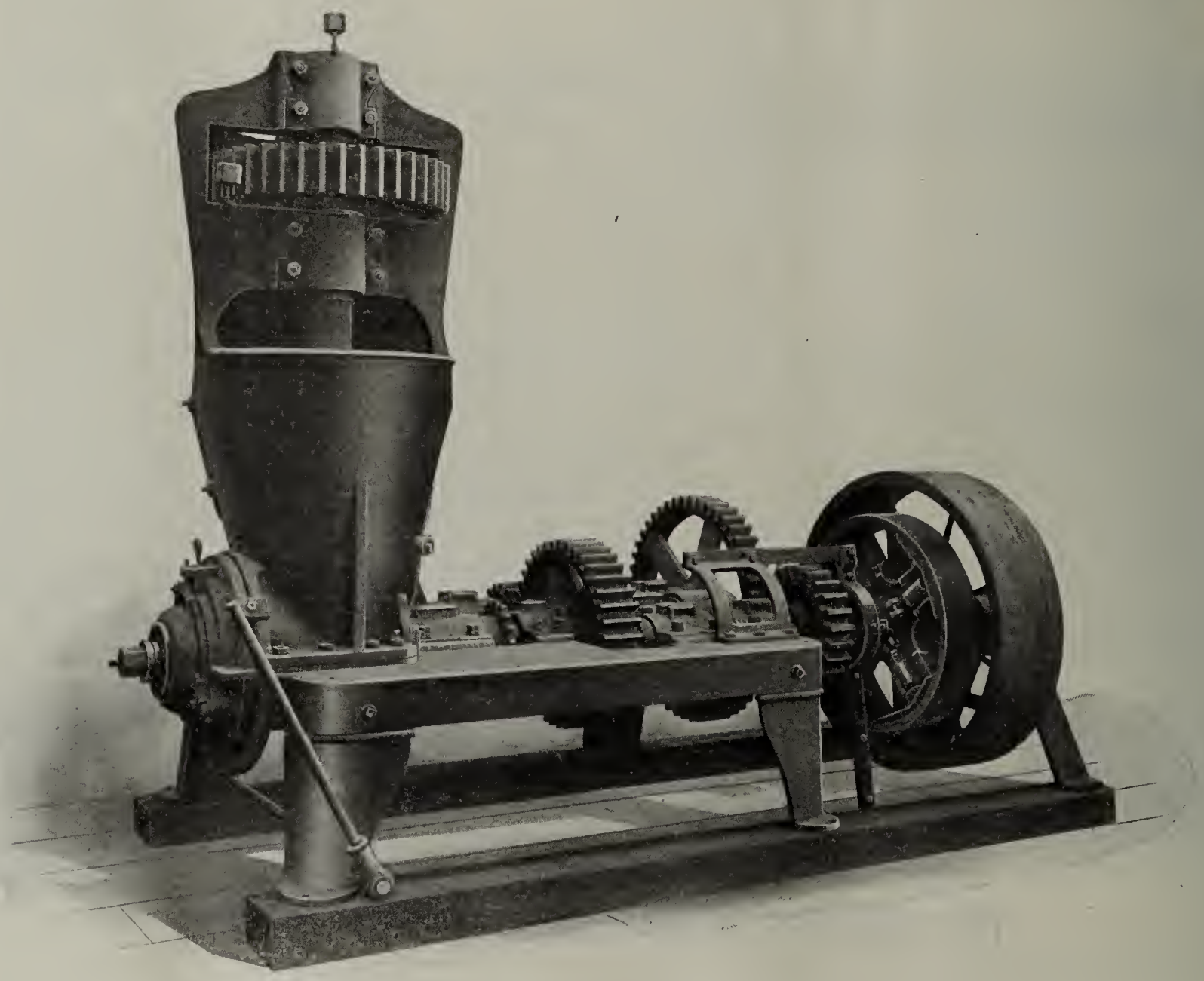
The Brewer No. 10A

A thoroughly modern machine in every respect, built particularly for those plants where drain tile, brick and hollow block are made.



We have redesigned our No. 10 machine, incorporating in the new No. 10A model every feature of strength, efficiency, durability and capacity which is known to the modern practice of machinery building. There is certainly nothing else in the nature of a brick, tile and block machine which can compare with it from any point of view.

Here are some features of the new machine worthy of notice: Upright cylinder and bridgetrees both cast together in one piece. No bearings in the clay. Marine pattern up-thrust. Forged steel knives. White iron augurs. New 4-arm pattern high-grade friction clutch.

Further detailed information upon request.

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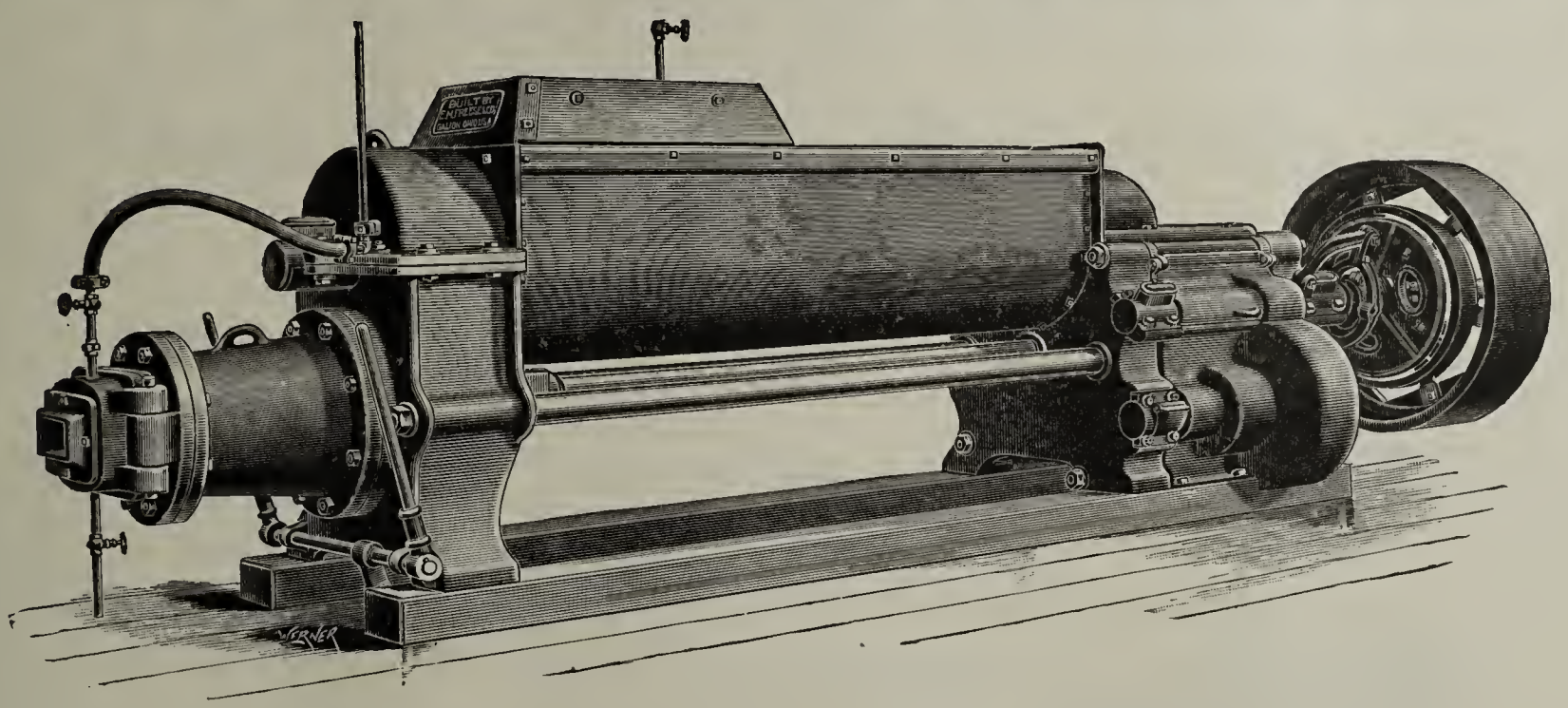

We build these Machines in five sizes. Capacities to 10,000 brick per hour.

Several hundred are in everyday use. They do first-class work and are convenient, economical and durable. This can be verified by investigation.

We also build Brick Machines with separate Pug Mill.

Don't forget our Automatic Cutters. **They give satisfaction.**

State your requirements and let us furnish particulars.

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LAMINATION is the source of more loss, more worry and more anxiety than all other troubles of a brickmaker

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C. M. Miller Mfg. and Mining Co. Inc.

MAKERS OF

High Grade Veneer and Building Brick

Office, 331 Ohio Street.

New Phone 1142.

Terre Haute, Ind. Dec. 22. *1904*

Mr. H. L. Hix, Mgr.

The Wallace Mfg. Co., Frankfort, Ind.:

Dear Sir—I feel that I must tell you my experience with the brick made on the Intermediate Wonder:—

A few days ago a very prominent contractor asked me to bring him some samples of our brick. I fixed up some samples and started to his place, and just as soon as he saw them, he said: "I don't want them—they are no good; I would not lay one of that kind of brick," but I begged him to look at them and tell me why he did not want them. He asked me if he could break one of them, and I said, "Yes, break all of them." So he took his hammer and hit one on the corner; then he looked up at me and said: "I never saw a stiff mud brick like that;" then he broke it all up, just as nice as any brick, and he said: "That is the first stiff mud brick I ever saw without lamination," and that they were all right.

We are now selling our brick as fast as we can deliver them.

Pardon me for taking your time, and with SUCCESS to the WONDER, I am,

Yours very truly,

Andy Connell

V Pres and Gen Mgr.

In the event that you want to make brick filled with LAMINATION, CRACKS and CROOKS, a Wonder Machine will not answer your purpose.

THE WALLACE MFG. CO.

FRANKFORT, IND., U. S. A.

Highest point of perfection achieved by the **WONDER.**

It works clays where other machines fail.

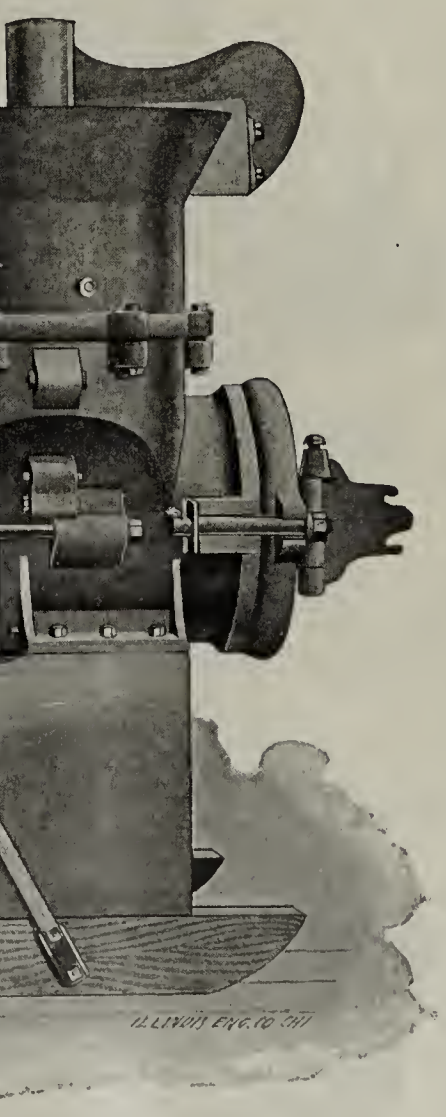
We are specialists in our line and difficult cases are sent to us for treatment.

Our experience has been large and varied, and may be of value to you.

Our service is yours for the asking.

Write us.

Our line is complete. We manufacture Brick Machines, Drain Tile Machines, Brick and Tile Cutting Tables, Automatic Cutters, Clay Preparing and Clay Reducing Machinery, and a full line of Brick and Tile Yard Supplies.



The Wallace Mfg. Co.

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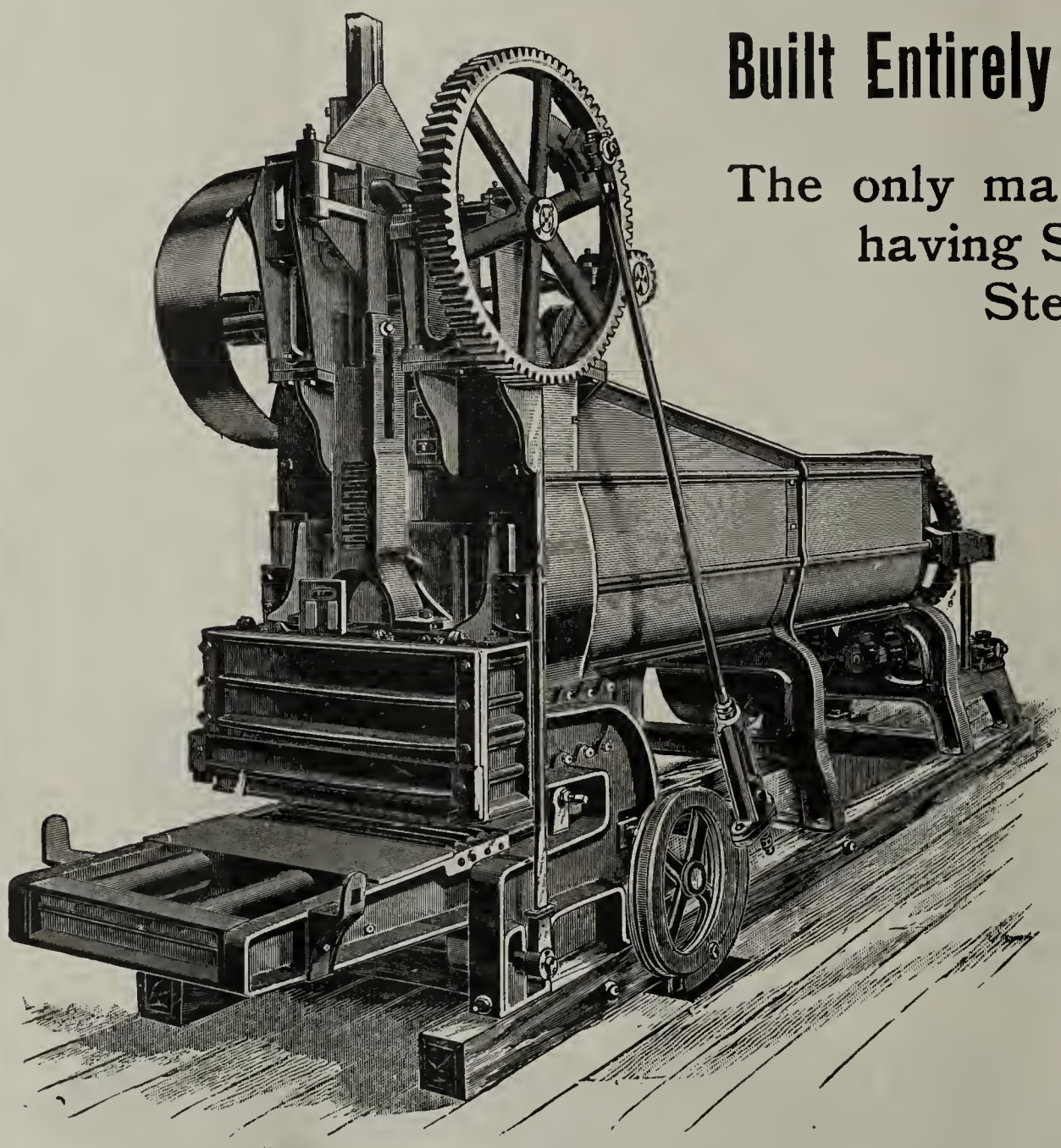
THE POTTS
HORIZONTAL BRICK MACHINE



Built Entirely of Iron and Steel.

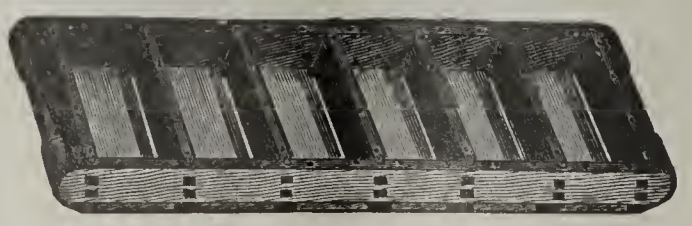
The only machine of this class having Steel Gear and Steel Shaft.

Built of the Best Material by the Best Workmen.

Simple, Strong and Durable.

No extra pug mill required to enable working the clay direct from the bank. Its great strength enables working the clay as stiff as practicable, insuring brick which will be STRAIGHT and SQUARE.

THE LEADER OF ALL SAND MOULD MACHINES.



BRICK MOULDS A SPECIALTY

QUALITY IS OUR AIM.

We manufacture a complete line of Brick Yard Supplies. Write for prices.

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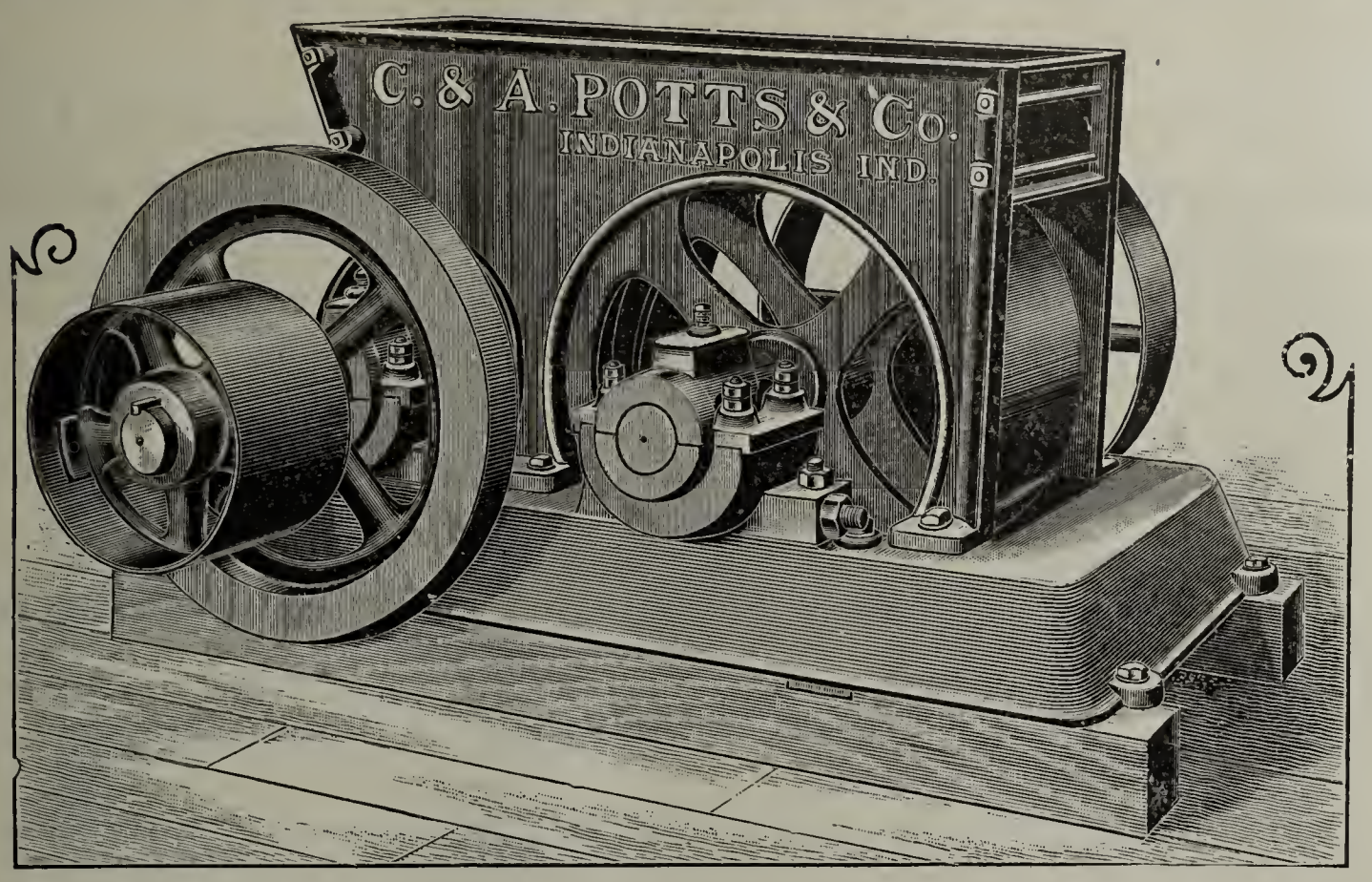
THE POTTS DISINTEGRATOR



Is not a spite machine, but is built the best possible. Having Heavy Chilled Rolls, Ring Oiling Bearings, Shafts of Steel and large in Diameter. The most successful machine for grinding out sticky clays and separating the stone.

THE POTTS MOULD SANDER

Simple in Construction,

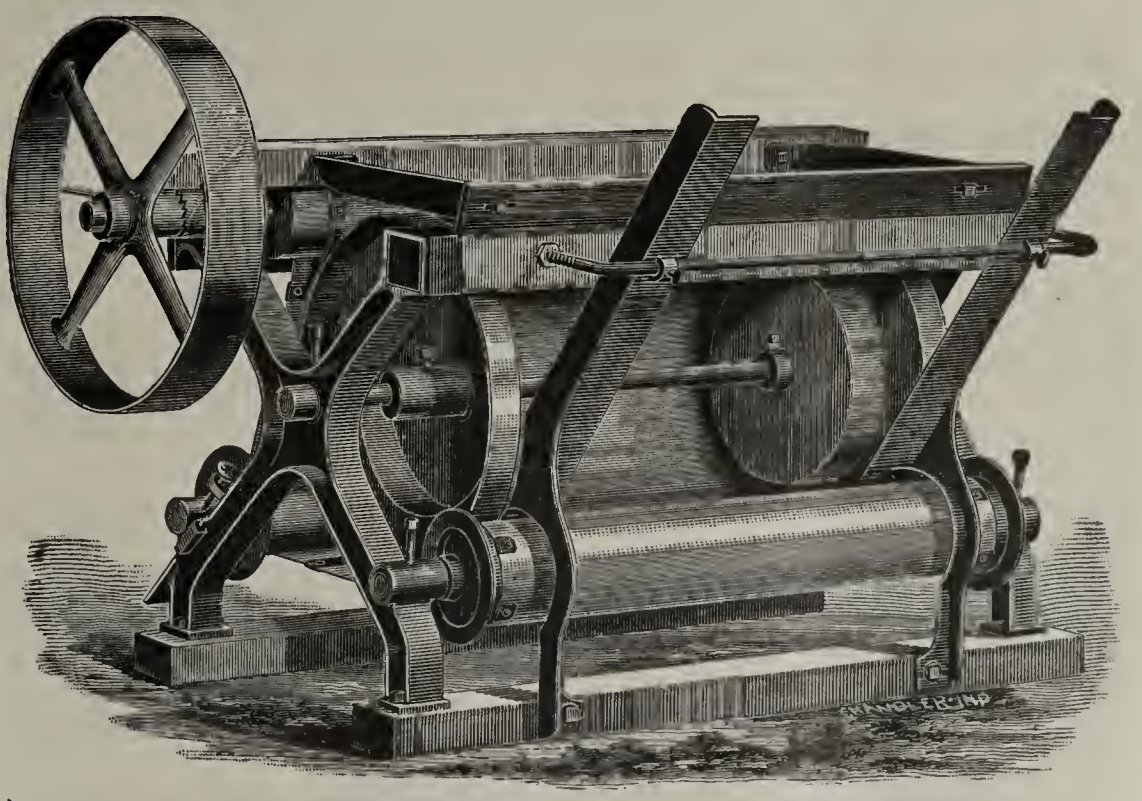
Strong and Durable,

Sands the Moulds Perfectly,

Never Strikes or gets Drunk,

Always Ready for Work,

No Brick Machine Complete without this Machine.



Patented February 5, 1889.

We make a specialty of equipping Sand Mould plants complete. We are the largest manufacturers of this class of machinery in the world. Write for prices.

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The "BUILT RIGHT

It is important if you have a dryer proposition to consult our dryer engineers. They are experts on Waste Heat Dryers, and will look over your yard and design you a dryer system to meet your needs. There are lots of points which bear on the successful operation of a Waste Heat Dryer. These should all be considered.

There is nothing like correctness of construction, and that is what we insure. If we take the commission of building you a perfect dryer you will get it. We first study your conditions and then design the best dryer to work under those conditions. **THEN WE BUILD THE WHOLE OUTFIT IN OUR OWN SHOPS.** We don't buy outside and divide the responsibility. When that dryer is done we are sure that it is "Built Right" and will "Run Right." Isn't it best to deal that way?

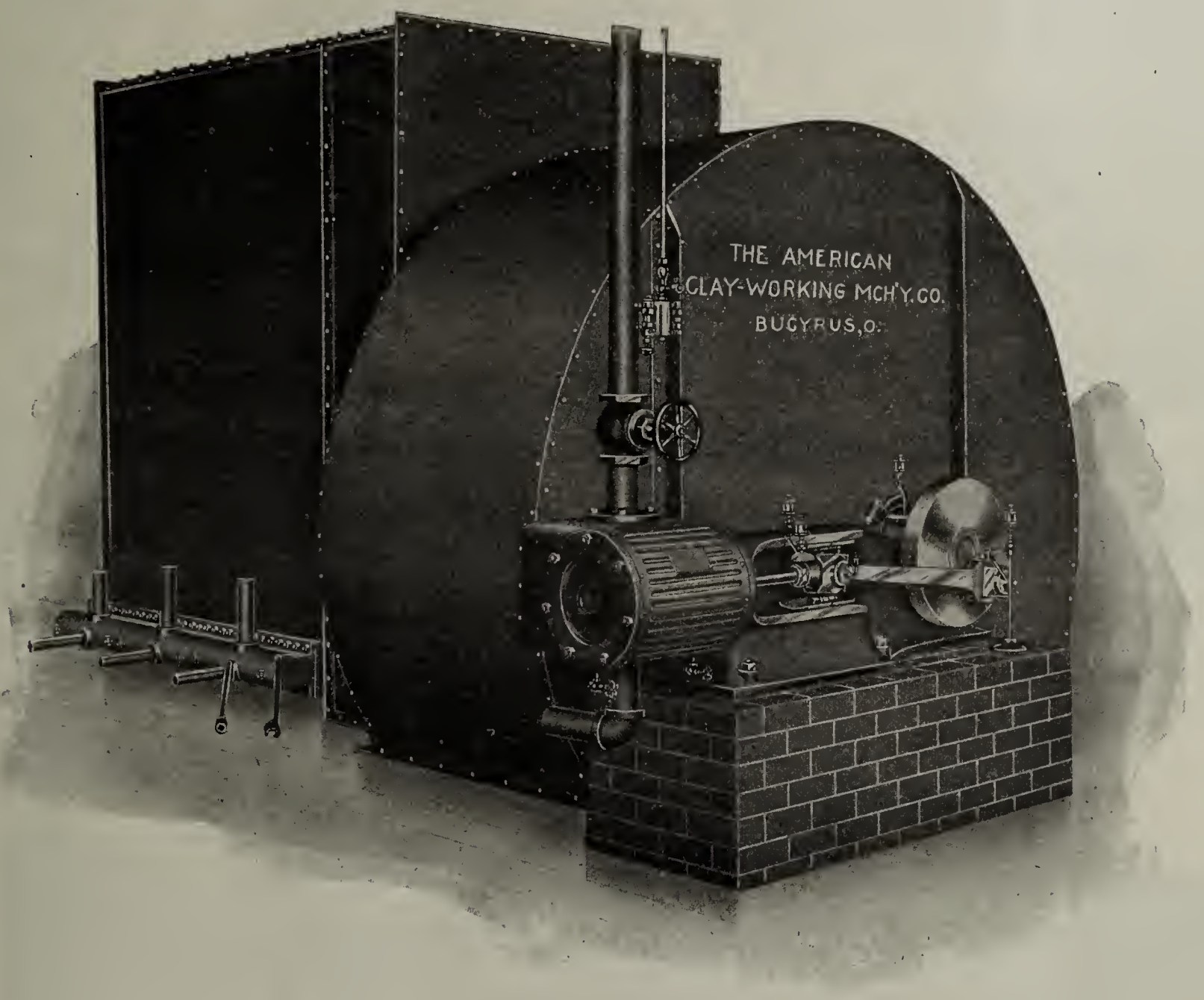
We are specialists on Waste Heat Dryers. We are pioneers in the business and have brought them to their present state of excellence. Our Waste Heat Dryer department has been given the most careful study, most tireless research, unflagging energy and unstinted cash to make it as near perfection as can be attained.

WE BUILD OUR OWN FANS. Every pound of metal that goes into them passes our own inspectors. Every bolt hole is punched under the eyes of our own men. Every rivet is pneumatically driven by our own workmen under our own superintendent.

In a word we KNOW WHAT OUR FANS ARE. We build them and we are positive that they are "Built Right and Run Right." You will find this trade-mark on every one of our fans, "Built Right Run Right" and it means exactly what it says.

Were we to buy our fans and other apparatus in the open market the fan makers would want a profit, and would strive to get the order, and to get it would cut the cost, and in the end you would have an inferior job in your plant. We can't afford to risk quality, because the permanent successful operation of the dryer rests largely upon it. If we make such a pronounced stand for quality, why shouldn't you? It means most of all to you. You pay for the dryer, and the success or failure of your plant depends upon it. We want to remove, so far as possible, all chance of your failure. That's why we build our own fans and other dryer apparatus so that we may be **sure** that our part of your plant is a success maker.

RUN RIGHT" Dryer.



We Build Our Own Dryer Apparatus and We Know Its Quality to be the Best.

THE AMERICAN CLAY MACHINERY CO.
BUCYRUS, OHIO, U. S. A.

We Manufacture Everything a Clayworker Needs.

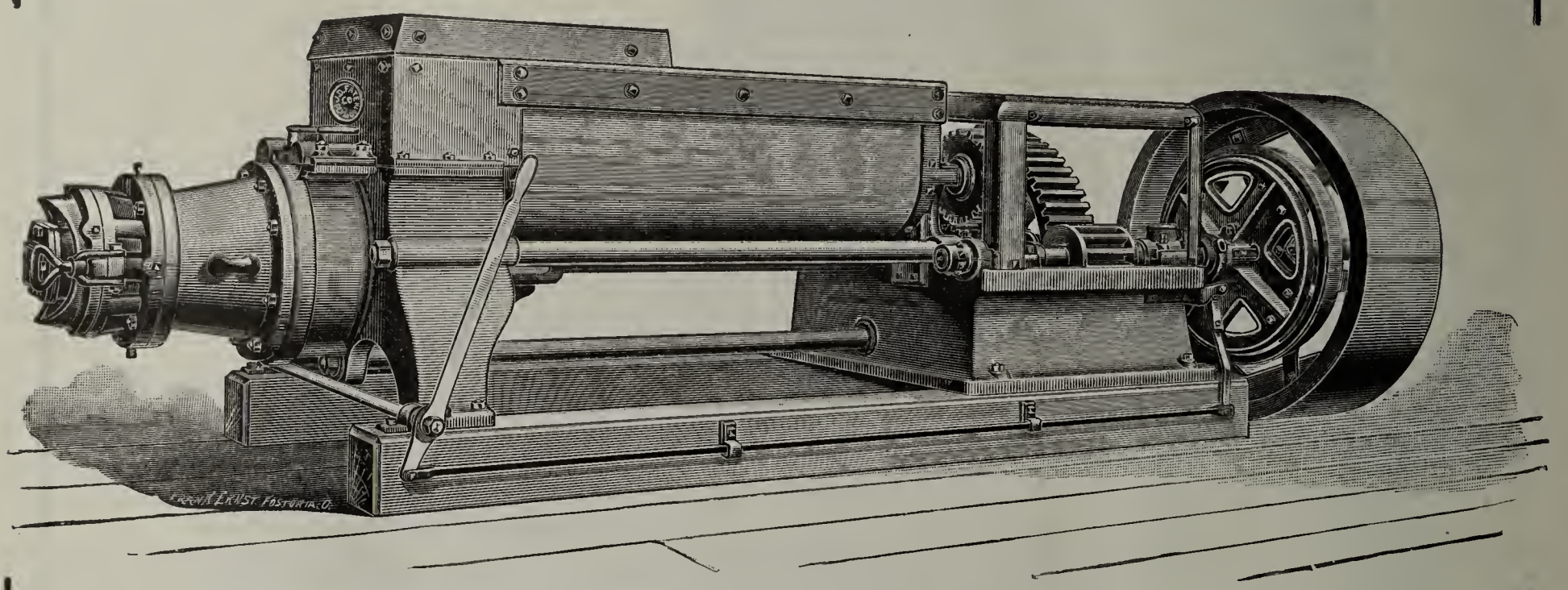
Write for Catalogue.

THE "PREMIER"

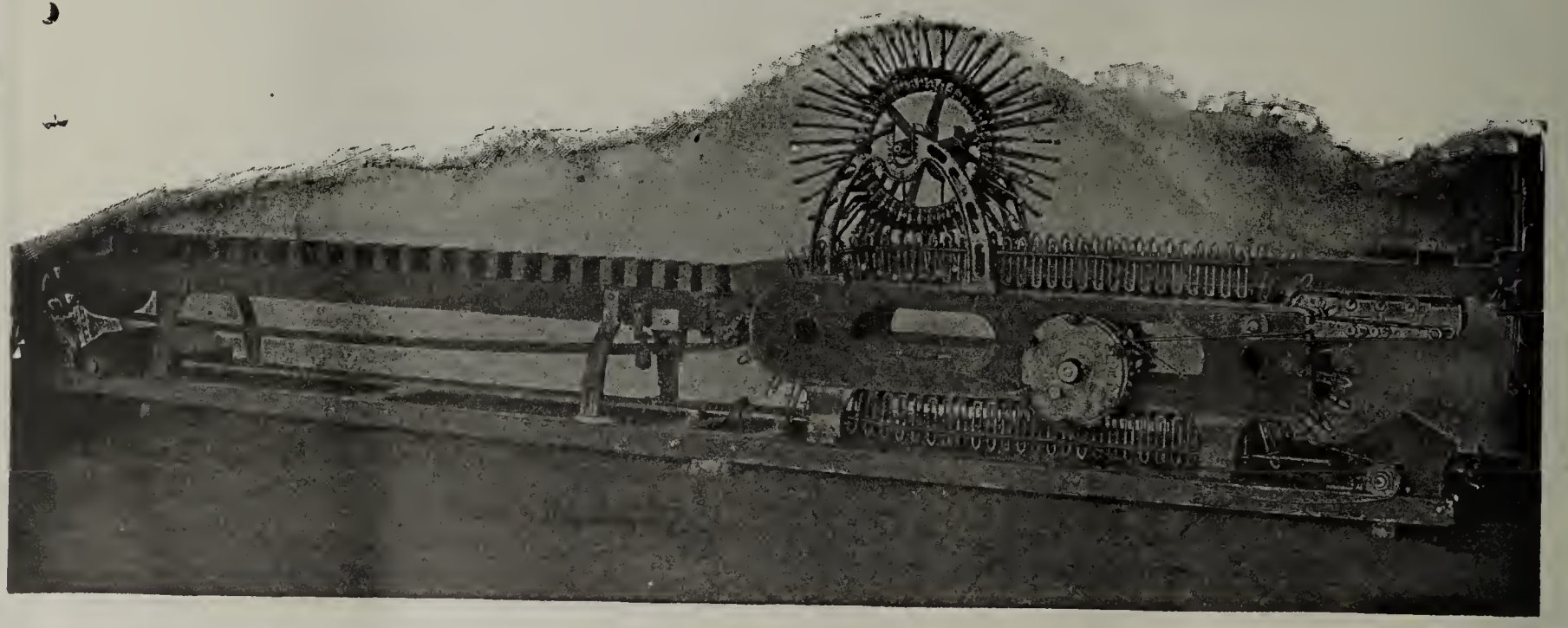
Combined Brick Machine

THE PREMIER LINE — THE J. D. FATE COMPANY

THE LARGEST LINE OF AUTOMATIC CUTTING TABLES IN THE WORLD



WITH BENSING'S AUTOMATIC SIDE-CUT BRICK TABLE.



Make a combination of Brick Machinery which is pronounced by practical brick makers to be the most perfect arrangement of stiff mud machinery now on the market.

It is unequaled for strength, durability, capacity and quality of ware produced.

Write us for catalog and full particulars of the "Premier" line of Clay Working Machinery.

THE J. D. FATE CO., = Plymouth, Ohio

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CLAY RECORD

Vol. XXVII. No. 3. CHICAGO, AUGUST 15, 1905. Semi-Monthly, $1.00 per Year Single Copies, - 10 Cents

THE CAUSES OF LAMINATION AND A REMEDY.

By Robt. Casson, A. M. I. M. E.

As laminations occur under such a variety of conditions, it is advisable before proceeding to discuss best methods applicable for their prevention, to consider briefly: 1st, the class of clay most liable to laminate; and 2d, the many contributory causes for this state of affairs in finished goods, as after a thorough grasp of the causes, we shall be in a position to state definitely how the clay ought to be treated, and by practical suggestions help to eliminate the evil in cases where inefficient handling through lack of knowledge of general causes or the use of unsuitable machinery is chiefly responsible for the dreaded cracks.

The "class of clay" in which laminations occur is generally distinctly stratified, of a pure rich fatty nature, containing little sand or silicious matter, is of a more than average porosity, the particles being fine and close together, the shrinkage in drying or burning usually being large. It is often exceedingly soluble in water, weathers and disintegrates rapidly, and when found in bulk, landslips are often a common occurrence in the clay pit.

The "contributory causes" may be summarized in a few words, viz.: Careless and insufficient preparation of clay before reaching the cutting-off tables; and unsuitable machinery. As this is a little too comprehensive, I propose to take the causes seriatim, and after an inspection of these to suggest in like order the various remedies to overcome the evil.

Contributory Causes.—1st, and most important. Where rich fatty clays are mixed with a material of a more sandy nature of greater density, whether clay from near the surface or calcined clay, the mixing (whether accomplished by pans, mixers, expression or crushing rollers) must be complete, for badly mixed clay is the prime cause of laminations.

2d. Where pug mills or mixers are used, the outlet is often too large and the passage of clay too free. This is a remedial detail of construction which can easily be greatly improved.

3d. Inefficient lubrication of die causes the outsides of clay column to drag, and if corners are not jagged or torn, the sides are much more dense than centre, and core cracks often result through this cause alone. If clays are very strong laminations show after drying, but in leaner clays after burning.

4th. Too close proximity of end of worm to die coupled with faulty design in entrance to die.

5th. Worn out worms.

6th. Too high a speed of worm, together with insufficient pitch.

7th. (In cases of a badly pressed mixture only.) Air in clay. This is generally in terra cotta goods, but not often in bricks. It prevents two surfaces from thoroughly coalescing, and a sharp dividing line often shows itself, or a distortion in shape of a swelling spoils what ought to be a regular surface.

8th. The two rapid evaporation of moisture from a brick will often cause it to show core cracks, when with better methods of drying the cracks disappear.

9th. Addition of too much water to the clay increases risk of laminations. Before giving remedies for the above, I propose to state as concisely as possible

How To Deal With Clays Which Are Prone To Laminations.

Setting aside two methods I have often heard advocated, but with which I do not entirely agree, viz.: the working of the clay by the American soft mud machine, which is rather an expensive method; or the hand-making process: the limited output from a given quantity of labor in the latter method, and the extra amount of moisture to be evaporated from bricks made by either system, and the fact that there are better ways of dealing with the material, being my chief grounds of dissent; the only point in their favor being the perfect mixing of the clay.

Assuming we have to deal first with a fairly dry rich soft shale coming from a single stratum in which there is little

variety, and which though rich is lean enough to make a marketable brick; and second, with a rich, soft, fatty clay, which must be made leaner by the incorporation of a sandy material.

In the first case the difficulty is not a great one, the chief point to remember being, "Thoroughly mix." This may seem an anomaly seeing the clay come from one layer or bed, but it is a stumbling-block over which many have come to grief; at different levels in the same stratum there are frequently different densities, and when this is so, the mixing must be as complete as though a less rich clay had been introduced, as the density and plasticity of column leaving the die must be as uniform and homogeneous as it can be made. I am of course assuming that a wire-cut machine is being used.

It is not necessary as a rule to weather clay of this description, as its particles move freely and it is naturally of a fairly tough texture.

After the clay has left the pit and been elevated to top of machine house, it should be passed direct into a hopper having its outlet in a pan of ample capacity. If the clay is dry and rather hard, two pans, first a perforated dry and then a wet one, should be used, or as an alternative a perforated dry pan and a mixer—one of these sets is necessary. If two pans are used (and these I would strongly recommend) the dry pan could be either at top of building or on floor line, and a conveyor fixed to carry the crushed clay, after being well ground in the dry pan, to the slotted wet one, which would be fixed at top of building above the rolls, or, what is much to be preferred, the pans could be fixed one above the other, the dry one being at the top, the clay falling from the dry into the wet pan. This method is becoming deservedly popular in Germany. Sufficient water should be added in either wet pan or mixer to make the clay of the desired permeability and plasticity, and here I would repeat (Cause 9) that too much added water not only increases liability to laminate, but increases cost of manufacture. In a rich, fat clay containing too much water the shrinkage during drying is increased, whereas with a lean clay containing an excess of water the shrinkage occurs in the kiln; in the former case core cracks appear after drying and in the latter after burning. (See also Remedies 9.)

After being well mixed in pans (and I advise pans rather than a mixer, as there is no means by which clay can have its mass so thoroughly made homogeneous as by a pan, the extra difference in horse power required between a pan and a pug mill or mixer is so small that the extra cost of driving is well repaid by the improved results), the clay ought to be passed through at least two pairs of differential rolls, *i. e.*, rolls of equal diameter revolving at slightly different speeds. The bottom pair could with advantage be run a little faster than the top set, as the faster they run the finer the clay will be. On leaving the second set of rolls, the clay ought to drop either into an ordinary pug mill, being forced forward through a steel water-lubricated die by means of knives and worm, or into a vertical machine having a pair of grooved expression rollers; the latter machine I recommend, as there is less risk of sore cracks. Sometimes the clay from a machine having a horizontal worm is forced out in two columns, and this is a decided advantage when dealing with this sort of clay, as the worm is not directly behind the emerging column. Too much stress cannot be laid upon the advantage of an efficient steel die lubricated by water, as I know of several cases where bricks coming from fustian-lined steam dies were cured of laminations by the installation of the metal water-lubricated type, the improvement no doubt being largely due to the more efficient lubrication.

Taking now the second body of clay we proposed to work, viz., a rich soft clay which must be made leaner by the incorporation of a sandy material, and after the right proportions have been found by experiment, the dry perforated pan proposed in the former case with the dry clay must be substituted for a pan containing a solid bottom; the removal of clay from this involves a little more labor, but as the mixing of the two clays is more complete, it is worth the cost and trouble. After leaving the dry pan and passing through the slotted or perforated wet one, the process would be as with the former dry clay. A double pug mill or mixer could be installed in place of wet pan; but as in the other case, I strongly advise the use of pan.

Having taken two samples of clay through the machine and proposed best methods of dealing with them, it would now be well to examine the contributory causes with a view to suggesting remedies mentioned above.

It sometimes happens that machinery is installed in brick works which, although unsuitable for the clay, it is highly inconvenient to pull out or replace, and yet it may by careful manipulation and strict attention to minor faults, be made to turn out passable goods without laminations with a clay which is prone to move in that direction.

Supposing we have a plant commonly met with, viz.: a mixer, two sets of rolls, an ordinary pug-mill, and a fustian-lined die lubricated with steam; the clay leaving the machine in a condition that shows laminations in the finished bricks. Turning now to the causes, and examining them singly, the first question being, Is the mixing efficient? if not, and we desire (without the replacing of mixer by pan) to increase the efficiency; we pass on to cause No. 2, where we note that when the outlet from mixer is too free, it can be remedied, and in order to keep the numbers of causes and remedies both alike I give this as

Remedy *No. 2.* By securely fixing on the inside at the outlet end of mixer a strong metal plate having holes slightly less in area than the end plate through which the clay is forced, and also by boxing in or covering over the same end on top for about 18 inches or 2 feet, we set up a larger resistance to the motion of the blades, the particles of clay are pressed harder into each other, and although not perfect we get a better mixing than before; it is obvious, however, where clay has not been crushed or ground, that this method will not break up hard pieces, and to accomplish this in the present case we must rely upon the speed and proximity of the rolls, which must be made to run faster than is generally the case. The breaking up of these pieces is one of the advantages possessed by pans over mixers. The insertion of the plate is an improvement, and in one case which I was

brought in contact with, completely cured laminations, the clay being of an exceptionally porous nature.

Remedy *No. 3.* Inefficient lubrication. In order to obviate this I propose to substitute a steel die fitted with water lubrication, as mentioned above.

Remedy *No. 4.* Having end of worm too near the point where clay emerges was a fault of the past rather than of the present day machine, and has to a great extent been remedied. The entrance to die should not be too rapid for if the bevel is large the clay is held too fast in die, and does not travel at anything like the same rate as the worm, and bad core cracks mouthpiece than is usual for average clay, and consequently a much slower taper.

Remedy *No. 5.* With a worn worm the remedy suggests itself, and a new one of as large a diameter as possible should be put in as early as possible.

Remedy *No. 6.* Too high a speed of worm with insufficient pitch or travel per revolution. Worms of equal diameter give better results when made with a large pitch and run at a moderate rate, than with a small pitch and run rapidly; in the latter case laminations are sure to occur in clays which are prone to laminate, and in clays which are not at all difficult to work and small pitch being responsible. The remedy consists of getting a worm as large in diameter as possible with a fairly large pitch, and keeping the speed down. This is a point which has not received that amount of attention at the hands of manufacturers which its importance merits.

Remedy *No. 7.* Air in clay. Careful filling of the mould is the most important point in a case like this; but it is not likely to occur in the hands of a careful and practical man. Where it occurs in bricks the worm is generally of too small a pitch, or not long enough; a set of expression rolls will to a great extent overcome this defect, and will often reduce the liability to laminate, but their insertion often causes serious structural alterations of a costly nature.

Remedy *No. 8.* Moisture being extracted too quickly. When a brick made from a strong rich clay is being dried too fast, by having the moisture drawn faster from the outside than from the inside, the outside shrinks faster and consequently there is an unequal shrinkage, stresses and permanent strains are set up which culminate in either drying cracks, twisting, or laminations. This is a subject requiring an explanation which would be much too long to be dealt with in an article of this description, but, briefly, if bricks are dried in the open, they must be protected from wind and sun; if on shed floors, the heat under floor must be turned on gradually, and if dried in a tunnel drier, the volume of air passing through or its temperature must be reduced, or the humidity at cold end of tunnel increased. The extraction of the moisture must be extended over a longer period of time and so avoid the unequal contraction responsible for the laminations.

Remedy *No. 9.* The addition of too much water to the clay. The addition of the water in the process of manufacture increases plasticity, and no matter how careful the man in charge may be, the column of clay leaving machine will occasionally be too wet, and when this happens there is an increase in shrinkage with its attendant increased liability to core crack, as the larger the shrinkage in drying the more prone are clays to laminate; therefore use water as sparingly as possible after the desired plasticity is reached.

It is a well-established fact that clay which has been placed under cover and kept in the dark for some time works smoother and tougher, and is not so liable to crack and laminate; but if the above system of two pans, two rolls and pug-mill, metal die, etc., be adopted, the expense of rehandling and storing the clay may be done away with. A sharp lookout ought to be kept for the small contributory causes of lamination, and if this is done and remedies applied as soon as cause is discovered, results will be obtained which will satisfy the most fastidious. Finally, I would again reiterate the advice given all through the article, namely, "Mix thoroughly," for it cannot reasonably be expected to obtain sound bricks made from clay containing large lumps which shrink during drying at a different rate to the clay surrounding them.—*Brick & Pottery Trade Journal.*

ANOTHER FIRE BRICK PLANT FOR KENTUCKY.

Olive Hill and Ashland, Ky., reach out and meet in a new business venture; the former furnishes the natural resources and the latter the capital, consummating in the erection of another colossal fire brick manufacturing plant at a not far distant period.

This new corporation will be known as The Olive Hill Clay Product Company. Their holdings comprise more than 8,000 acres of rich fire clay lands, located in and about Olive Hill, and joins the property of the famous Olive Hill Fire Brick Co., and that of the Portsmouth Harbison-Walker Company.

This newly proposed firm has almost an unlimited capital at its command, and, better yet, a combined brain capacity hardly equaled in the state.

Every man interested is a born "pusher," and has already "arrived" several times in life's relay race. To insure the confidence of the public, we need but to mention the names of some of the gentlemen interested, who are:

Hon. John F. Hager, F. H. McClung, Wm. Watson, J. W. M. Stewart, Dr. M. G. Watson, J. B. Eifort and Jno. C. C. Mayo.

This company's main office will be at Ashland in the Blackstone Building, while the plant will be located near Olive Hill. The dimensions of the plant we did not learn, but more than likely it will be of large capacity, and entirely modern in its details. If this version be correct here will be found a source of employment for 200 or 300 laborers, many of which will be skilled.

WILL ESTABLISH A LIBRARY FOR THE EMPLOYES.

The Scioto Fire Brick Company, Portsmouth, Ohio, has made arrangements to establish a library near the company's plant in a building owned by the company. The company has bought 500 of the old books from the Portsmouth library trustees and are now engaged in removing them to Prescott's, where they will be stored for the present. Later they will be rebound, boxed and shipped to Scioto Furnace.

NEW SAND-LIME BRICK FACTORIES IN THE FIELD AND NEW PRODUCTS PRODUCED BY THEM.

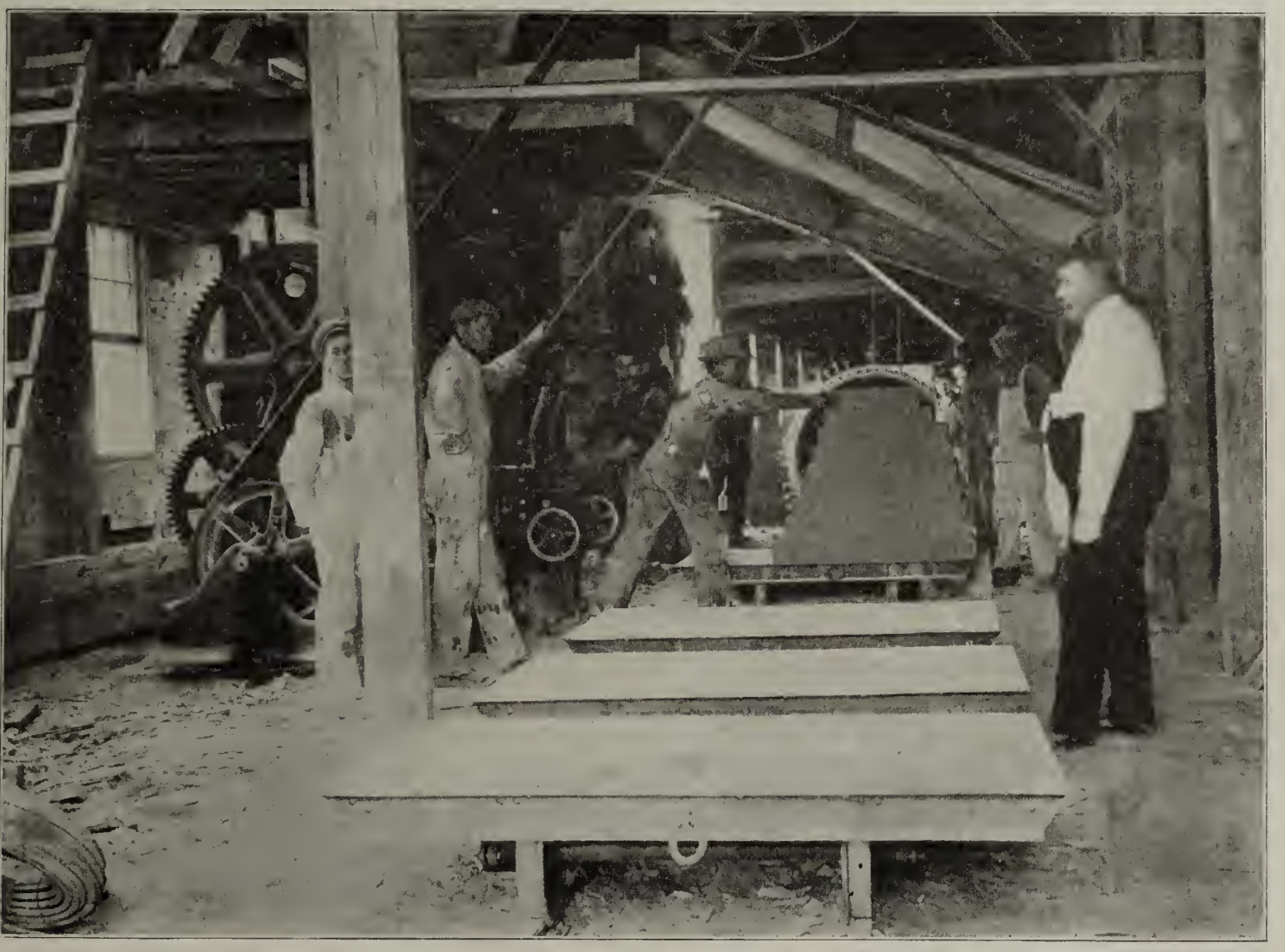
Among the Sand-Lime Brick plants recently set in operation, are the factory of the Waterloo Granite Brick Company, located about a mile from the center of the city of Waterloo, Iowa, on the Chicago, Rock Island & Pacific Ry., and the factory of the Red Wing Brick Company, located about the same distance from the center of Red Wing, Minn., on the Chicago Great Western Ry. These plants occupy a ground space of about 150 feet by 75 feet, and contain four buildings: viz., the mixing and press room, the power house, the hardening shed and the lime house. The mixing and press rooms contain the measuring, mixing and grinding machinery; the storage bins and conveyors and the press. The power house consists of the engine and boiler rooms and the hardening shed is a structure covering the hardening cylinder and the engine pulley on the main shaft. Although the factory at Waterloo was set in operation only last month, the company has already found a very ready sale, at good prices, for all the brick they can produce. At this factory the sand is brought from a distance of about a half mile and is of a very good quality, containing, however, heavy gravel. It is delivered to the factory by wagons and dumped into a specially constructed sand drier, then is elevated and the heavy gravel screened out, then passes to a measuring machine where the sand and lime are automatically measured and from there, as is the practice in all the "Huennekes" plants, the sand and lime, to be properly tempered, are passed into a storage bin. Unslaked lime being used in the mixture, the same is left in the storage bin over night where hydration is completed. From the storage bin the material is conveyed direct to the hopper of the press, from thence it passes to the special Sand-Lime "Boyd" press where the material is molded in brick form, stacked on cars, as shown by interior view of the Red Wing Brick Company's plant, Figure No. 2, and delivered to the hardening cylinder where they are hardened under high steam pressure. The bricks are left in this cylinder for about ten hours, after which they are immediately ready for use. By referring to the cut of the Waterloo Factory, Figure No. 1, you will note that the bricks are being taken direct from the smaller cars, which have just left the hardening cylinder, and delivered to a railroad car for shipment.

At the Red Wing Company's plant, which is located at the base of a very large sand deposit, the sand is fed directly onto a conveyor and conveyed through the factory to the press in the same manner as already outlined in paragraph above. The bricks produced in both factories are very superior and they are already attracting much attention in the locality of Red Wing, they are also commanding the favorable notice of architects and contractors in St. Paul and Minneapolis, have samples been submitted for the erection of the Woman's building to be erected in connection with the "Soldiers" Home at Minneapolis, Minn., which were very favorably commented upon by the trustees and architect. Further, they have already furnished their bricks for use in the erection of the Odd Fellows Hall in Red Wing. The Red Wing Brick Company has had from the very first a demand for their product which tests the greatest capacity of their plant, and it is their intention to immediately extend the same to double its present capacity.

Exterior of the Waterloo Granite Brick Co.'s Plant, Waterloo, Iowa.

The bricks made by the Red Wing Brick Company have stood fully every known test applied to the best pressed bricks made out of clay. This factory is located adjoining the large works of the Red Wing Sewer Pipe Company and the manager of the Sewer Pipe Works was desirous to know what heat the new product of the adjoining factory would withstand and a few of the bricks were taken and placed into one of the kilns and exposed to heat ranging from 2,500

to 3,000 degrees Fahrenheit, a temperature necessary to burn or glaze the sewer pipes. The bricks, having undergone this tremendous heat, did not show any signs of disintegration but, on the contrary, after having been taken from the kiln showed every sign of being a very desirable fire brick and are being tested at the present time in the sewer pipe kiln to see if this product could not take the place of the fire bricks employed by the Sewer Pipe Works heretofore. It was certainly a very remarkable test, and speaks well, not only for the material, but also for the process and the machinery installed in the sand-lime brick factory, which have been furnished and installed by the H. Huennekes Company, engineers and contractors, No. 114 Liberty street, New York City, and No. 660 Monadnock Building, Chicago.



Interior View of the Red Wing Brick Co.'s Plant, Red Wing, Minn.

The Waterloo factory is located adjoining the works of the Waterloo Automatic Stone Machine Company, who are manufacturing a machine for the production of hollow concrete blocks made out of sand and cement. Some of the mixed product for the manufacture of bricks was taken to the adjoining works and tests were made for the manufacture of hollow blocks with this machine. These tests not only produced a very high grade block but showed conclusively that sand and lime will produce a much denser and harder block than sand and cement and, as a matter of fact, the adjoining company went immediately to work and produced a large number of blocks from sand and lime, with their machines, and sold the same at higher prices than the concrete block. Considering that it takes from ten to forty days to produce a hard concrete block, while the sand-lime block is produced over night, and further considering that the cost of the cement alone in a block will pay for the total cost of production of a sand-lime block, there seems to be no question or doubt that the production of the hollow sand-lime blocks will not only prove profitable to those who are making sand-lime bricks, as an additional source of profit, but also that the manufacturer of a good, hollow block machine has found a new market for the same. It must be understood that the mixture, as required for the manufacture of such large blocks, must be absolutely perfect in order that the hollow block may be handled at all or will stand up without crumbling during the hardening process. It must be understood furthermore that not every kind of hollow block machine can be used, for the reason that the sand-lime brick mixture, as compared with the sand-cement brick mixture, is rather dry and tender and the machine itself must handle the blocks without vibration or sudden jerking. The Huennekes Company has tried many machines for the manufacture of hollow blocks, and states that the machine produced by the Waterloo Automatic Stone Machine Company is the first which has commercially produced a very satisfactory product.

We are informed that the Huennekes Company of No. 114 Liberty street, New York, and No. 660 Monadnock Bldg., Chicago, is about to prepare a special treatise on the subject of manufacturing hollow blocks and fire bricks and other building material with their machinery and process, and that they are about to introduce the manufacture of such articles in the various factories equipped with their machinery and operating under their system. This company has been experimenting for quite a time during the past years in these various branches of materials akin to clay products and has been very successful in obtaining practical results.

THE MANUFACTURE OF TILE.*

By William Adamson, Walkerton, Ont.

The subject of tile making which has been allotted to me, is an unpopular subject compared with bricks. I find numbers of brickmakers throughout the country who do not make tiles at all. Some have never seen them made, and some do not know how they are made—they take so little interest in it. For that reason quite a number of you will not be interested. Here in Waterloo County I am a comparative stranger now, but I might say I was raised in this county. My father was foreman in a concern here, and while engaged in that capacity he made the first tile ever made in the county of Waterloo, and he got up a machine for the purpose. It is a different business from what it was originally. When tile were first made they rolled them out with a rolling pin, like pastry, and pulled them over a stick, and let them rest on the edges. Numbers of them were made that way. Later on they commenced pressing them, and they had a double-ended machine with a crank in the center, and every time the plunger came back—it was a double plunger on a crank—a boy threw in a lot of clay, and as they were made another boy carried them off. Later on they got into what they called the jackass power, turning a crank, opening the top of the machine and filling it, and then turned it to run it out. That had its advantages and its disadvantages. This jackass power, when the clay gets too stiff, is very sensitive and generally whenever it struck the machine it stopped. The man feels the pressure of the stiff clay and it simply stops and won't turn. Since that they are all made with a different kind of process. When I heard the last discussion I began to think I was in a hornet's nest. I thought all the people were Kells people, and none in favor of the plunger at all; but towards the last of the discussion I found there were some favorable to other machines. For my own part I always liked a plunger machine, but it is only a matter of opinion and partly a matter of different kinds of clay. Some clay will not work with one kind and some will not work with another kind. A man's opinion goes a long way. A Kells machine will work almost any kind of clay into tile, and so will a plunger if it is properly handled. There is one thing some people are troubled with in tile, especially in the spring when their clay bank freezes—they fill their machines, as with the plunger machines, and when they get working up that soft clay they have trouble with it; their tile comes out scaly like the back of a fish. I find the best way is to take the die off and clean it. It is the change of temperature that causes it more than anything else. The clay in the spring is not even; the inside is very soft and the outside gets crusty. Of course that can be remedied a great deal by the use of a pugmill. I wouldn't be without one for my own part.

Question.—The trouble is not from lack of care in the drying and burning?

Mr. Adamson.—No. I can make a batch of a thousand or so 8-in. tiles and I wouldn't lose more than two or three in the drying, and I put them out in the sun.

Mr. Moody.—What do you consider a day's work?

Mr. Adamson.—I am not making a business of tile only, and for that reason I do not try to run too hard or I would run short before fall. I have very few hands. I take one man to temper and I have two boys; one will cut off and another wheel out and run the engine. Those three will make from 3,000 to 3,500 4-in. tiles. I can make and burn 3-in. tiles for $3.75 a thousand. I don't think any man can beat that with the Kells machine. I was talking with Mr. Davenport, up in Walkerton, and he said it could be done with the Kells machine.

Some time was taken up with statements from the various members of the association as to the cost of coal, wood and labor, but, as in our own conventions in the United States, the conditions differ so much in the different localities that no definite computation could be made from the figures presented from which could be formed a reliable standard.

There were several interesting discussions on belt dressings about this time, and we reproduce some of the statements made.

Mr. Adamson.—I find by using belt dressing you can run your belts a great deal slacker. I had a belt very slack, and when I started up in the morning that belt would try to come off, and if we did not watch it, it would. We just put on about two or three drops of belt dressing and it would run it all day. I use a kind they call Cling-Surface. If anyone wants to try it they won't make a mistake in getting it.

Mr. Hilliard.—Don't you think if your belt was heavy enough you wouldn't need that?

Mr. Adamson.—Yes; but we don't need nearly as heavy a belt.

Mr. Hilliard.—I had some trouble years ago, and I got that kind of stuff and daubed it on, and it was a failure. What you want is a good big heavy belt about twice the size you have now. This stuff you put on clogs your belt, makes a rough surface and wears it to pieces in a few days.

The President.—Has any person else anything to say on the question of manufacture of tiles?

Mr. Moody.—We were much troubled with tile cracking, and the remedy I found for that was blocking up the outside pretty well and keeping the wind off. Take this common red sand immediately after you have fixed them, go over and sprinkle them with it on the outside of the tiles of large blocks, and it prevents the wind from penetrating the clay, and it is a wonderful help in keeping them from cracking. We find it a success.

Mr. McCredie.—I don't understand how you use that sand.

Mr. Moody.—Throw it on the ends and on the tops with the hand. I put the sand on the outside, on the side exposed to the wind.

Mr. McCredie.—It won't stick there.

Mr. Moody.—It will if you put on immediately after the tile is made. I would sooner take a little chestnut or yellow

*Read at the last Ontario Clay Workers' Association meeting, held in Waterloo, Ont.

sand that is damp; it will stick better than the drier sand. There is quite sufficient sand in our clay.

Mr. Adamson.—Did you ever put salt in your clay?

Mr. Moody.—No. If you made quite a lot of material it would be very expensive.

Mr. Adamson.—I was troubled terribly with my tile cracking and worming and popping. They would blow off like fire crackers in the kiln. I overcame the difficulty by putting an exhaust fan on the chimney of the kiln to increase the draft and as long as I have got that fan running I can't make them pop. It draws so much cold air into the kiln over the fire that it dries the kiln, and without overheating it gains about 14 hours in time by this fan. It is a disk fan, the style of a windmill, about three feet in diameter, and run to 400 r. p. m.

Mr. Moody.—Does this soak the steam off from under?

Mr. Adamson.—Yes, and it is coupled with the chimney; and then I have the flues all underneath the kiln running to that chimney. I have three chimneys on the kiln and I close my dampers up. I have the damper above the fan, and it draws underneath the damper and draws on the bottom of the kiln. I run it about 12 to 15 hours and I have the kiln dry by that time. Before it took me twice as long to steam off as it does now.

Mr. McCredie.—I don't think the object of our convention is so much as to how cheap we can make a certain quality of tile, but our object, should be this: to know how we can make the best tile the cheapest. Our object should be to make the best tile for our customers and at the same time make it cheap. Not that we should cheapen the price to our customers particularly or put up the price, but to get the very best article that can be made out of clay and lay it down for our customers' use. That is our object. I have been over the country considerably, and I have seen a great deal of poor tile making, and I have made my share of it. I have had a great deal of difficulty along this line, and I have found a difficulty where I have tried to get the very best machinery I could get, put it in the best order I knew how to put it, found the best supplies in all the details of the manufacture of tile, and I have found that I have failed because I could not get men to do the work as I wanted it done. I have had tile put on my yard that was simply worthless because of bad handling by my workmen. This is one of the difficulties that a tile maker has to meet with. A tile from my point of view must be a round tile to begin with; it must be straight and it must be cut square at the ends to be a good tile. If it does not have all these characteristics it is a partial failure. Our tiles should not only go into our sheds perfect and true, but they should come out of the kiln perfect and with a good solid ring. A tile that is perfectly safe to stick its nose out at the end of a drain for all years to come, where it meets the atmosphere and the effects of the frost and water; that is the kind of tile we should make. There is a difference in clays—some clays will stand more frost than others; but every tile maker should endeavor to make a tile that will answer and fulfill all these conditions.

Mr. Hilliard.—Which will draw the most water—a hard tile, a soft tile, or a medium tile?

Mr. McCredie.—I am not a professor, but I can give you my point of view. I think some people get the idea that a tile takes in the water clear through the outside of the tile where there are no cracks or openings. I think it is the wrong idea. A tile or brick will absorb a certain amount of water by capillary attraction, but it won't pass that water on to an open space so that it will run off. I think I am correct in that. There is a question above that, and that is this: a tile can be burned and vitrified so that it is smaller than its neighbor; that is not a proper tile to put in a drain along with its neighbor of different dimensions. A tile should not be shrunk so that it is a quarter or an eighth inch smaller than its neighbors. It should be burned a good even burn and give a metallic ring, and not burned beyond that. That is my opinion of what the burn should be.

THE LARGEST SAND-LIME BRICK PLANT IN AMERICA.

One of the most important events which has happened recently in the sand-lime brick industry in this country, is the formation of the New York Granite Brick Company by the H. Huennekes Company, of 114 Liberty street, and some of the most prominent engineers and architects in this country. There are interested in this company, besides the officers of the H. Huennekes Company, William Barclay Parsons, engineer for the subway of the city of New York; St. John Clark, engineer for the new tunnel and subway being built from 42d street to Long Island; C. D. Deyo, chief engineer of operations of the subways in New York City; Mr. Ross, of the firm of Eidlitz & Ross, well-known contractors in steel work; John Wilbur, president of the Salem Nail Company, a concern of over forty years' business standing in New York; W. S. Bailey, a capitalist and one of the largest contractors for building material in the city of New York, and some very prominent architects. This company has contracted with the H. Huennekes Company for the entire equipment of a factory to have an actual capacity of 100,000 bricks per day of ten hours. The factory site has been selected, the same to be located at South River, near Sayreville, N. J., and directly in the heart of the brick manufacturing district. The officers of this company are composed of the gentlemen named above and in addition thereto Mr. L. F. Kwiatkowski, president, and Mr. F. A. Crandall, vice-president of the H. Huennekes Company. This factory will be erected during the present fall and winter, and will be ready for operation by the commencement of the coming year, and turn out bricks for building operations during next season. This factory is to constitute but the first of a series of factories to be erected by the same company in order to cover completely the demand for sand-lime bricks in the New York market.

TALK TILE FACTORY WITH GOVERNOR.

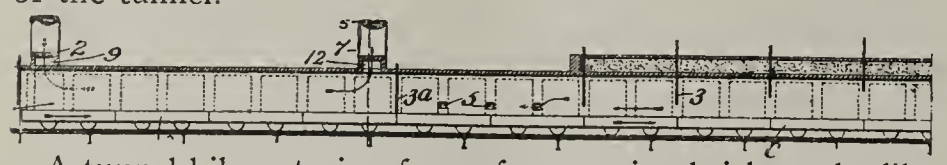
The commissioners of the southern penitentiary at Chester were in conference Aug. 10th with Gov. Deneen regarding the establishment of the tile factory at the penitentiary to furnish tiling for use in constructing hard roads in the state.

NEW INVENTIONS THAT ARE OF INTEREST TO THE CLAY MANUFACTURER.

These new inventions are those that are especially of interest to anyone engaged in the line of building materials and their manufacture, or machinery to make them:

793,290. Continuous Tunnel-Kiln. Albert A. Gery, Reading, Pa. Filed Oct. 12, 1904. Serial No. 228,128.

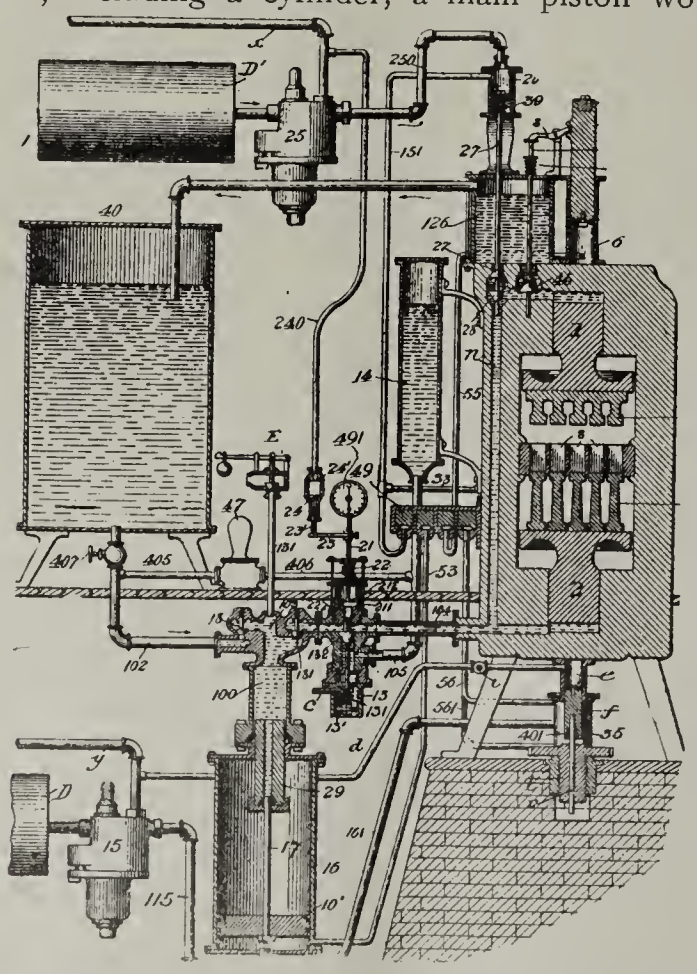
Claim.—A tunnel-kiln, a train of cars for carrying brick or the like therethrough, means for maintaining a reverse current over the outgoing and inner tunnel brick, means for supplying fuel to said inner-tunnel brick during their passage, a shut-off valve forward of the incoming end of the tunnel to cut off the reverse current through the latter, and a side-wall flue with inlet thereto from the tunnel forward of said shut-off valve, whereby the reverse current is conducted through said flue to indirectly heat the incoming end of the tunnel.



A tunnel-kiln, a train of cars for carrying brick or the like therethrough, means for supplying fuel to the inner tunnel, and means for maintaining a continuous reverse current passing first through the forward and inner tunnel in contact with the brick therein and thereafter through a separate passage-way contiguous to the entrance end of the tunnel to indirectly heat the incoming brick and separate means for producing a forward current in the entrance portion of the tunnel whereby the moisture is separately withdrawn therefrom.

793,910. Compressed-Air-Operated Hydraulic Brick-Machine. Thomas S. Rouse, Alexandria, Va. Filed June 5, 1899. Serial No. 719,466.

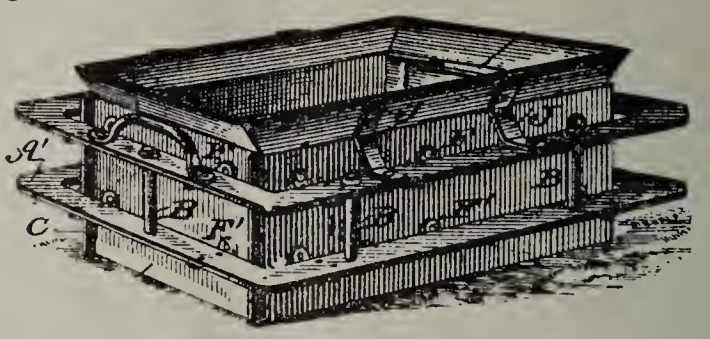
Claim.—In a hydraulic press for brick and the like, the combination of a plunger, hydraulic apparatus for operating the same, including a cylinder, a main piston working in



said cylinder, an auxiliary piston also working in said cylinder, a source of air under pressure, and connections whereby the main piston is operated to actuate the plunger to compress the bricks, and the two pistons are operated together to actuate the plunger at an accelerated speed to discharge the bricks for the molds.

In combination, in a hydraulic press provided with a plurality of plungers, a relief-tank, and a passage-way joining the plunger-cylinders, a valve 28 in the passage-way, valves 27 and 46 between the press and the tank, means connecting the valve 28 to the valve 27 and to a piston in an air-cylinder, elastic means for elevating the piston, a reservoir for compressed air, a valve in a connection between the reservoir and the air-cylinder, means for operating said valve to establish communication between the air-cylinder and the reservoir, means operated by one of the plungers to open the valve 46, and means for applying pressure to the water in the press.

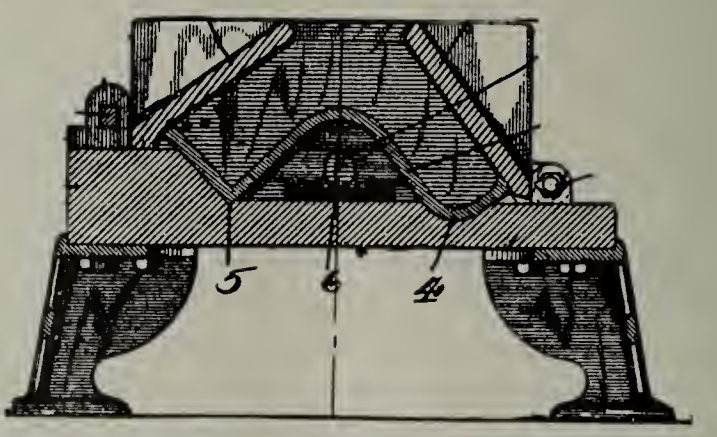
793,539. Building-Block Mold. John M. Pettyjohn, Terre Haute, Ind., assignor of one-half to William Pannill Pettyjohn, Terre Haute, Ind. Filed Feb. 25, 1904. Serial No. 195,180.



Claim.—The combination in a mold adapted to be lifted from the material being molded and distantly placed for the next molding action, of a box having separate sides and ends, a bottom from which said sides and ends may be freely lifted, a core adapted for arrangement within the mold, means whereby the core may be secured to said bottom, frames spacedly surrounding the box, arms hingedly secured to the box sides and ends and the frames, whereby the mold may be lifted and by which action, the box sides and ends are drawn laterally and simultaneously lifted, and a hopper secured to the frames, substantially as described.

793,056. Mold for Concrete Curbing. Henry H. Clough, Elyria, Ohio. Filed March 14, 1904. Serial No. 197,969.

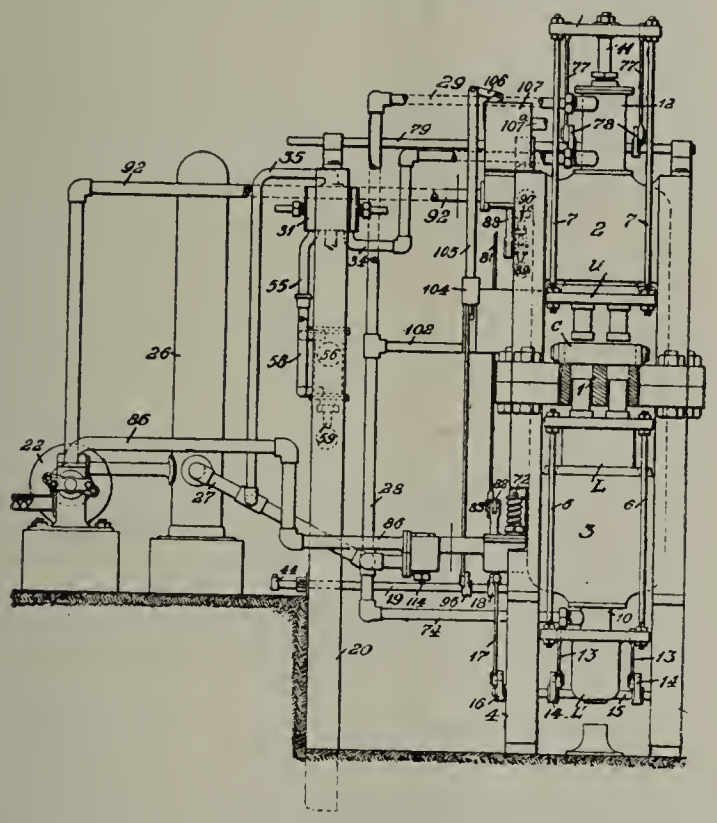
Claim.—A mold comprising a removable bottom and knockdown side and end walls to provide for opening the mold to remove the contents thereof together with the mold-bottom as a support therefor, the side walls being connected by check-plates designed to embrace the end walls of the mold when the mold is closed, substantially as described.



A mold comprising a bed-plate, a mold-bottom removably supported thereon, said bed-plate and mold-bottom being provided with interlocking guide-surfaces to define the position of said mold-bottom, end walls hinged to said bed-plate, side walls, check-plates which connect said side walls and are designed and adapted to embrace the end walls of the mold when in closed position, one of said side walls being hinged to the bed-plate and means to detachably secure the other side wall to said bed-plate, said mold being provided with an opening beneath the mold-bottom for the insertion of a rod or bar for removing said mold-bottom, substantially as described.

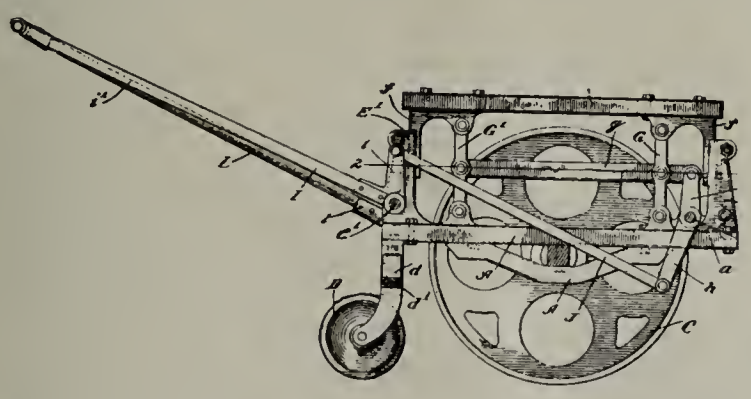
794,822. Brick-Press. Valentine Then, St. Louis, Mo., assignor of two-thirds to Robert E. Gurley and Robert A. Ogle, St. Louis, Mo. Filed Aug. 26, 1904. Serial No. 222,286.

Claim.—In a brick-machine, the combination with fluid-actuated upper and lower rams, a valve, valve-controlling mechanism operated by said upper ram to admit successive excessive pressure impulses alternately to both the lower and upper rams, causing them to move toward each other stey by step to compress the clay brick to the required thickness; substantially as described.



In a brick-press, the combination with fluid-actuated upper and lower rams, a charger, a fluid-actuated piston for operating said charger, a cylinder in which said piston is mounted, a valve for controlling the admission and exhaust of pressure to and from the ends of said cylinder, means to actuate said valve when said lower ram approaches the limits of its movement, a valve 73 for controlling the exhaust of pressure under the lower ram, a valve 114 controlling a by-pass to divert the pressure from under the lower ram means operated by the charger for operating said valve and means operated by the upper and lower rams for respectively opening and closing the valves 114 and 73; substantially as described.

795,350. Cart or Truck for Handling Brick. John J. Gledhill, Chicago, Ill. Filed June 6, 1903. Serial No. 160,285.

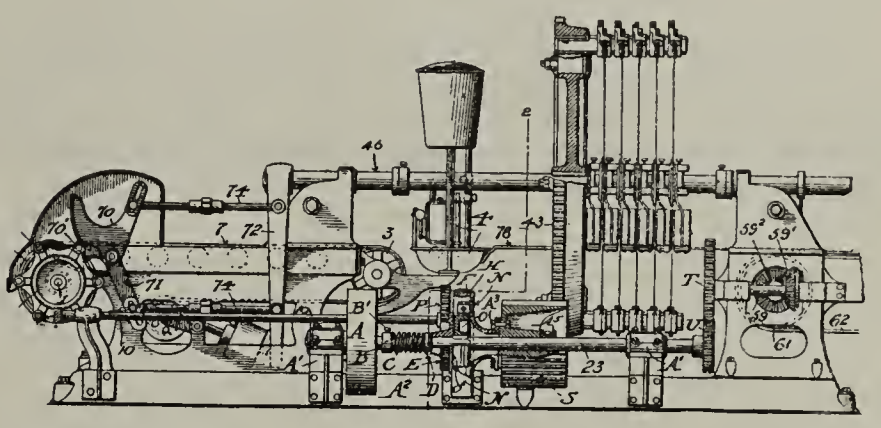


Claim—1. A cart or truck for handling brick, comprising a stationary body portion mounted on wheels, a vertically-adjustable body piston, toggles connecting the said body portions, parallel side bars connecting said toggles, a rock-shaft provided with a pair of crank-arms having their ends connected with the said side bars, a third crank-arm on said rock-shaft, guides for said vertically-adjustable body portion, and a bell-crank-shaped hand-lever having its short end connected by a link with said third crank-arm.

2. A cart or truck for handling brick, comprising two large supporting-wheels provided with an axle, parallel beams mounted on said axle, a rear cross-bar connecting said beams, a rear caster-wheel having its stem mounted to turn in a bearing on said cross-bar, vertical guides mounted on said parallel beams, castings arranged for vertical sliding movement in said guides, a pair of parallel beams mounted on said castings, toggles connecting said castings with said guides, a rigid pushing-handle, and a bell-crank-shaped hand-lever suitably connected with said toggles and adopted for raising and lowering said last-mentioned beams, said handle and lever both extending rearwardly.

795,583. Brick or Tile Cutting Machine. William R. Cunningham, Bucyrus, Ohio, assignor to The American Clay Machinery Company, Bucyrus, Ohio, a Corporation. Filed April 3, 1905. Serial No. 253,418.

Claim.—1. In a brick and tile cutting machine the combination of clay-measuring mechanism, clay-cutting mechanism, and a governing mechanism for causing the cutting devices to continuously revolve in register with and by the travel of the bar of clay said governing mechanism comprising a fixed drive-friction and a loose friction operable together in the same direction and said loose friction under the variations of the travel of the bar of clay.



In a brick and tile cutting machine, the combination with a measuring-table mechanism, a governor-shaft operable therefrom and provided with a gear-wheel, and a revoluble cutting mechanism, of a drive-shaft having a driving friction-wheel fixed to it, a gear-wheel loose on said drive-shaft and having a surface to engage said driving friction-wheel, said gear-wheel meshing with the first-named gear-wheel, and adapted to slip relative to the driving-friction when a variation in speed occurs between the two, a long pinion loose on the drive-shaft, a clutch mechanism carried by said long pinion, and means between the clutch mechanism and the loose friction gear and operable by the latter to cause the clutch to engage the driving friction-wheel with a pressure which substantially varies with the travel of the measuring mechanism whereby the cutting mechanism is revolved in register with and by the travel of the bar of clay.

795,488. Process of Manufacturing Brick or Tile. Charles B. Coxe, Carlton, Minn. Filed May 18, 1905. Serial No. 261,065.

Claim.—The process or method of making bricks, or tile, which consists of mixing dry sand or granulated or powdered slate or their equivalent with a very small proportion of dry cement and then very slightly dampening the compound but not sufficiently to cause the bulk of the component mineral particles to adhere to each other without pressure, and then subjecting it in molds to a pressure of upward of five thousand pounds per square inch of brick area, and then storing the bricks so formed in a moist environment for upward of thirty-six hours, substantially as described.

CLAY RECORD.

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ENTERED AT THE CHICAGO POST OFFICE AS SECOND-CLASS MATTER.

Vol. XXVII. AUGUST 15, 1905. No. 3

"I like to read American advertisements. They are in themselves literature, and I can gauge the prosperity of the country by their very appearance."—William E. Gladstone.

When times are dull and people are not advertising is the very time that advertising should be the heaviest. Ninety-nine out of every hundred merchants advertise most when there is least need of it, instead of looking upon advertising as the panacea for their business ills.—John Wanamaker.

To the wise an ounce of hint is better than a pound of subsequent advice.

When it comes to making a swift touch the glad hand is very much in evidence.

The average man would soon attain perfection if he follows the advice he hands out to his friends and neighbors.

Do not get too busy to keep track of your fire pails. A little water at the right time may save you many a dollar.

THE CLAY RECORD, the only semi-monthly clay paper published in America, sells twenty-four copies, or one year, for a dollar. Can you afford to be without it for this mite?

The Crane Company, of Chicago, known far and wide, recently celebrated an unique and an unusual event, the anniversary of its half-century in business, and had present, hale and hearty, its originator, founder and president, R. T. Crane, Esq.

In trade history, there will be found a very few concerns having a similar experience, and rarely an instance where there were present the man or men who founded them.

At the picnic, Mr. Crane delivered an address to the thousands of employes, a talk full of hard common sense, but just such a speech as we should expect from a man of his sterling qualities, and the only regret is that all men engaged in business and manufacturing are not like him; if they were, the friction so common in business life would be reduced to a minimum. He had something to say regarding the relations of employers and employes, and so full of wisdom are his remarks we cannot refrain from quoting some of them, space forbidding reproducing the entire talk, but we refer our readers to the July issue of "The Valve World" where they will be found in full.

We quote: "The employer does not force himself on the employes; each is indespensable to the other, and they naturally come together for the benefit of both."

"No employer can afford to be penurious or overbearing in the treatment of his men, and there are very few who do so. Should they treat their men badly they would find it impossible to keep good men, except in very depressed times."

"The working men should realize that employers and employes are practically partners in business, and that they must work together in harmony if they are to succeed, and that one cannot be injured without the other also suffering injury."

"It is a short-sighted policy on the part of the workmen to create unnecessary friction with the employer and make the situation unnecessarily disagreeable to him, with the mistaken idea that the more annoyance and discomfort they cause him the greater will be the advantage to themselves."

"The working man, instead of imaging that the employer is his emeny, should realize that his real enemy is the buyer of his labor after it has been put in the form of a manufactured article," following this with a clean-cut description of the sharp tactics of lage buyers, adds: "If the employer is not the friend of the working man, then he has none, and if the workingmen make war on the employer from within, while he is fighting their battles against the buyer from without, then they are guilty of doing all they can to injure the only one who can serve them."

On the duties of the employe to his employer he says: "He has entered into a contract with the employer by which both sides are bound. It may be said that if he fails to perform his part of the contract, that is, give a fair day's work for a fair day's pay, he is just as much of a cheat as the merchant who gives short weight or short measure."

"Again, the humane employer is entitled on his own behalf to some little consideration from the employe besides his day's work; no employe should tolerate any waste or destruction of his employer's property."

We can congratulate Mr. Crane on the success he has achieved, and wish him many years of life to enjoy the

results of his labors of head and hand and heart; and while he has prospered from a worldly point of view, the wealth of love and affection abounding in the hearts of his employes for him cannot be measured in dollars and cents, and all the riches of the world could not buy it; besides, it will abide forever.

ACCIDENTS, DAMAGES AND LOSSES.

Howard Locum, an employee of the Montello Brick Works, Reading, Pa., was ground to pieces in a clay mixer which he in some unknown manner fell into.

Harry Brown, an employee of the Boone (Ia.) Brick, Tile & Paving Co., was caught in a cave-in and had his leg broken and otherwise injured.

Buried in a clay bank at Speer & Clark's brick yard, Toledo, Ohio, Tony Shombuski was rescued by fellow laborers. He will recover.

E. F. Morris, trustee in bankruptcy, has sold the Volant Clay Manufacturing Co.'s property which was organized about a year ago by New Castle, Pa., capital.

W. D. Southwell, superintendent of the brick plant for the Port Vernon Oil Company, Orange, Tex., sustained a compound fracture of the right arm.

Grant White, a colored man, lost his life at J. E. Whiteselle & Co.'s brick works, Corsicana, Tex. His clothes got caught in the belting and he was beaten to death before the engine could be stopped.

The T. B. Townsend Brick & Construction Co., Zanesville, Ohio, is made the defendant and damages for $1,500 are asked because of injury done the main street of Taylorsville, by reason of an excavation.

Receiver L. M. Glidden of the Tacoma (Wash.) Brick & Tile Co. filed a final statement and conformation of same, showing the plant had been sold for $5,375, and that it had been turned over to C. M. Easterday.

The property of the National Portland Cement Co. at Martin's Creek, Pa., was sold at sheriff's sale to A. F. Gerstel for $50,000, subject to a claim of $1,500,000 held by the Northern Trust Company of Chicago.

OBITUARY.

D. E. Brooks, aged 59 years, a prominent brick manufacturer of Painesville, Ohio, died August 5, after an illness of six weeks. He leaves a wife and one daughter.

Ossian Cook, Oshkosh, Wisconsin, for many years at the head of the Cook & Brown Lime Company, a well known Odd Fellow, and a business man of exceptional ability, died at his home of general dibility, age 72 years.

The factory now being erected by the H. Huennekes Company at Jacksonville, Fla., for the Florida White Pressed Brick Company, is about completed and will be set in operation during this month.

FIRE! FIRE!! FIRE!!!

The plant of the Frankfort (Ind.) Brick Co. was destroyed by fire. The men had just finished the burning of a 300,000 kiln and the roof over this fell and soon caught fire. Loss $3,000; fully insured.

Fire broke out in the plant of the Steger (Ill.) Brick Co. and almost completely destroyed same. Mr. Frank C. Ross, the owner, is at present in a hospital in Chicago, as the result of the railroad wreck two weeks ago.

The plant of the Star Brick Company at Dickerson Run, Pa., was totally destroyed by fire, the plant being a complete loss, estimated at $10,000, partly covered by insurance. Plant will be rebuilt soon as insurance is adjusted.

The brick yard of Charles R. Knight, 1925 East Jewell street, Denver, Colo., was destroyed by fire, causing a $5,000 loss. The plant will be rebuilt under the name of the Western Brick Company, much larger than before.

The sheds of the Bennett Pressed Brick Co., at the head of Van street, Newport, Ky., was destroyed by fire, causing a loss of $2,000 to same and to green brick.

Feter's Brick Works, Harrowgate & Nicetown avenue, Philadelphia, Pa., was destroyed by fire, causing a $15,000 loss. No insurance.

PRISON MADE BRICK NOT SATISFACTORY.

More trouble has arisen over the prison made brick shipped to the state fair grounds at Springfield, Ill., for use in the new dairy barn. The state board of agriculture may refuse the brick as inferior in quality and not fit for use in the walls of the structure. The bricks were sold to the state at $6 per thousand. When they arrived here the problem of switching them to the fair grounds came up. The railroads wanted $5 a car, notwithstanding all exhibits and the like are switched to the grounds for $2 per car. The prison labor board had to adjust this difficulty and when the brick finally reached the grounds they were objected to as too soft. The Chester prison reports that it has sold this season 3,000,000 brick for use in school houses and state buildings. The price has been $6 per 1,000, or $18,000. Considering that the labor costs only its board and clothing $6 ought to be a profitable price and the state ought to make some money on its brick.

A meeting of the construction committee of the state board, the contractor on the building and C. M. Tinney, secretary of the prison industries board, is in session in this city to go over the entire matter.

The Millville (N. J.) Filtration Sand & Brick Company have closed a contract with the H. Huennekes Company of No. 114 Liberty street, New York, and No. 660 Monadnock building, Chicago, for the erection of a factory, capacity 20,000 bricks per day. The Huennekes Company will erect this factory, complete, from the ground up inclusive of all buildings. The product is to be shipped to Philadelphia mainly.

INDUSTRIAL MAP OF THE ERIE RAILROAD SYSTEM.

Louis Jackson, the industrial commissioner of the Erie Railroad System, 21 Courtland street, New York, has just issued an industrial map of the road. This map shows the advantages of the Erie railroad, New York to Chicago, in relation to manufacturing, fuel, markets, and route. Every section of the line has its particular merits.

The industrial department has all the territory traversed by the railroad, districted in relation to resources, markets, and advantages for manufacturing, and can advise with manufacturers of specific products as to suitable locations, furnishing them with current information dealing with the project in its full relation to manufacture and commerce.

A NEW PLANT FOR NORTH PHILADELPHIA.

Mr. William Kelley, who purchased the large tract of land in North Philadelphia, Pa., has just started his new 70,000 daily capacity soft mud brick plant which has been completely installed by the Henry Martin Brick Machine Manufacturing Company of Lancaster, Pennsylvania, which firm furnished the entire equipment, including two (2) 100 horsepower Coatesville Boilers, one (1) 125 horsepower Corliss Engine, with two equipments of their heavy style "A" machines with Pug Mills, Clay Conveyors, Compound Disintegrators, with a Cable System for handling the clay from the clay banks, together with the "Martin" System of handling and drying soft mud brick. This plant is one of the most modern, labor-saving equipments that has been installed in that section of Pennsylvania.

BIG PERCENTAGE OF BRICK MADE ON THE HUDSON RIVER.

The counties along the Hudson river produced 78 per cent of the whole product of the state of New York of brick. There are 110 plants, Albany having eight, Columbia four, Dutchess seventeen, Greene four, Orange nine, Rensselaer nine, Rockland thirty-four, Ulster twenty-one, Westchester seven. Albany is one of the fourteen counties in which fire brick and stove lining are manufactured and one of the sixteen counties in which terra cotta, fireproofing and building tile are manufactured. Albany also has a pottery where red earthenware is manufactured.

Molding sand of excellent quality is supplied from the Hudson river valley. In Albany, at Delmar and Selkirk, there are large deposits, which yield the finest grade of sand for the manufacture of stoves and other castings that require smooth finish.

Lime stone also furnished some revenue in this county last year. Of the total product of $994,475 for the state, Albany is credited with $47,872 for crushed stone, $1,125 for lime made, $700 for building stone and $500 for other uses. There is also within the borders of Albany Devonic sandstone. The bluestone quarried along the Hudson river in Albany, Greene and Ulster counties, about 75 per cent in value, was sold as curbstone and flagstone and about 22 per cent as building stone.

NEW INDUSTRIES FOR KNOXVILLE.

A big new industry for Knoxville, Tenn., will start this week. It is the Alec. Scott Brick Company. Already about $60,000 has been spent in building and equipping the plant. Mr. Scott is the patentee of a brick car that is a great labor saver. The plant, which he has now built, is also a large labor saver.

In the entire manufacturing process of the brick only two boys handle the product from the time a steam shovel takes the material from the earth and it is dumped into a freight car. Of course, there are machine operators besides.

As stated, a steam shovel will be used to handle the dirt for the brick. This machine will scoop up yards of dirt, tilt it into a series of moving cars, which carry the dirt to the hopper of the mill manufacturing the brick. Issuing from the mill the brick move away on a belt into a joint dryer and kiln. Two can remove the brick from the belt and stack them. Once the combined kiln and dryer is filled with brick a big fan is started. This fan carries hot air through the brick into a conduit under ground. When the brick are dried they are burned in the same place by having fires under them. This is an unusual process. All other processes require handling from the dryer to the kiln.

The capacity of the plant at the present time is 60,000 brick per day. It has taken considerable means and much time to establish the plant but the saving of cost in the manufacture of brick is expected to make the investment a very profitable one.

The plant is located west of the city on the Southern Railway tracks, a short way beyond the crossing of Third creek.

U. S. BRICK CO. GETS LARGE TAMPA CONTRACT.

The United States Brick Company (Reading, Pa.) received a telegram announcing that the city of Tampa, Fla., had awarded it a contract to supply 15,000,000 vitrified paving blocks, to be used in the extensive street paving.

Brick manufacturers from all parts of the country had been at Tampa for weeks working for the contract which the United States Company landed owing to the high standard of their product and the low figures, owing to large facilities for manufacturing.

The brick will be manufactured at the Catskill, N. Y., plant, on the Hudson. They will be shipped all the way by water, as they can be loaded from the plant to the boat at the docks.

This is one of the largest brick contracts awarded for some time past, and the United States Company has been receiving congratulations.

The Federal Granite Brick Company of Scranton, Pa., which has been operating very successfully a factory under the Huennekes System for the past year, is about to complete their second factory at Sayre, Pa., equipped with machinery under the same system with all improvements and additions up to date. This factory will have a capacity of 40,000 bricks per day.

OPPORTUNITIES.

Opportunities for the manufacturer, business man and investor along the line of the St. Louis & San Francisco R. R. and operated and associated lines, including the Chicago & Eastern Illinois, Evansville & Terre Haute and Evansville and Indianapolis railroads has just been increased by the industrial department of the Frisco System. M. Schulter is the commissioner and the office is at 709 Frisco Building, St. Louis, Mo.

To clayworkers who are not satisfied with their present location or those who wish to branch out, this booklet is of vital importance, for it gives the location of hundreds of banks of good clay or shale for making brick, tile or pottery, also the demands and population of each town or locality. Write for a copy if interested.

DIAMOND BRICK CO. TO BE GREATLY ENLARGED.

The Diamond Brick Co. is to greatly enlarge its plant and increase its force of employes in Barberton, O. Paul & Henry, local contractors, have been awarded a contract for installing seven new kilns for the manufacture of sewer pipe. The manufacture of sewer pipe is to be a new branch at the plant. The members of the company intend to have a great output of sewer pipe, and every facility will be provided for this.

Work on the additions to the plant will be begun at once. The work is under contract to be finished by Sept. 5. The improvements and additions intended will cost in the neighborhood of $25,000. When completed and enlarged the plant will give employment to several hundred more men.

A LARGE CONTRACT FOR THE BESSEMER CO.

The Bessemer Limestone Company, Youngstown, O., has secured an order for 5,000,000 brick for the new stack of the Republic Iron & Steel Company at Haselton. The announcement was made last week, the order having been placed through the Youngstown Ice Company, its local selling agency.

The furnace will require some 4,000,000 fire brick in addition to the common brick which the Bessemer Limestone Company will furnish. This contract has been let.

The Struthers Furnace Company, through the Mahoning Builders' Supply Company, has already secured an order for 20,000 sacks of cement. The total order for the stack will amount to 35,000.

As has been stated before, the William B. Pollock Company has secured the contract for the stoves and the structural work for the stack.

The factory of the Artesian Stone & Lime Brick Works Company, located in the city of Chicago, and equipped by the H. Huennekes Company, is about to be set in operation. This factory is constructed entirely out of steel, equipped with the highest grade of machinery, and will have the largest capacity of any factory erected, up to date, in the United States.

MORGAN CONTINUOUS GAS PRODUCER.

In an artistically prepared catalogue entitled "Morgan Continuous Gas Producer," much information of value is presented to all who are interested in the most economical manner of generating and applying heat. The details of tests made by Robt. W. Hunt & Co. showing an average efficiency of 92 per cent are given, and the points of the producers that made possible this efficiency are set forth; 6x9, 50 pages with embossed cover and numerous illustrations. If you are interested in economical heat write to Morgan Construction Co., 40 Exchange Place, New York.

THIEVES STRIP AN ELWOOD BRICKYARD.

Since the sale of the Rodefer brickyard in Elwood, Ind., by the receiver in bankruptcy every bit of material that could be carted away has been taken by the junk thieves. One night a team drove to the yard, stripped the twenty-six kilns of the iron doors and fastenings and started to drive away. The horse, hitched to a spring wagon, in attempting to cross a railroad switch, fell and broke its neck and the body of the animal was removed before daylight that the identity of the junk thieves might not be learned. The iron doors and frames were unloaded and the wagon was left standing on the track.

CAMPBELL WORKS TO SUPPLY 2,000,000 FOR USE AT GALLITZIN TUNNEL.

Four months of steady work are ahead of the Bruce H. Campbell Brick works, Johnstown, Pa., which has been awarded a contract for the construction of 2,000,000 brick by Peter Brendlinger, the Philadelphia contractor who is repairing the old tunnel at Gallitzin. The price is in the neighborhood of $20,000. The brick are to be specially prepared, hard, well-burned and vitrified, and delivery is to begin within a couple of weeks.

Contractor Brendlinger chose the brick after tests made of materials submitted by several well known brickmaking firms. The local plant furnished the brick for the new Gallitzin tunnel, about three years ago.

CONNECTICUT MANUFACTURERS MAY HAVE TO ENLARGE THEIR ESTABLISHMENTS.

President Vigil M. Palmer of the Central New England Brick Company, New Britain, Ct., states that the entire season's output of the plants of the company has been disposed of. The production of the yards will be 75,000,000 brick, and of this amount about 5,000,000 will be consumed in new construction in New Britain. A large part of the summer's product will go to New York. The New York market is open to the local company to a greater degree than in previous years.

All of the brick-manufacturing plants in this vicinity are operating to their full capacity this summer, and if the demand continues, some provision for enlarging the output next season will have to be made.

SAND OR LIME-BRICK OR BLOCK NEWS.

Schroeder Bros. & Voges, have started the manufacture of cement brick at Long Prairie, Minn.

The factory of the Sioux Falls (S. Dak.) Pressed Brick Co. is working hard to keep up with orders. Alderman Ed. Johnson is president of the company.

Dr. W. F. Buren, Jesse B. Evans and J. C. Lomax are experimenting with a view of installing machinery in Princeton, Mo., for the manufacture of sand-lime brick.

The Lake Superior Sandstone Brick Co., Houghton, Mich., will double the capacity of their plant at Ripley, the coming winter.

I. Luke, a local contractor of Marysville, Cal., has installed a small plant for making cement brick and blocks, also has another contracting firm, Chappins & White.

The W. C. Schlaeter Co., Manitowoc, Wis., have added a concrete brick machine that will enable them to turn out concrete brick.

The Menominee (Mich.) Brick Co. are installing a large sand dryer in their sand-lime brick plant so they can be assured of dry sand at all times.

The plant of the Diamond Brick Co., Wilmington, Del., is running night and day trying to catch up with orders for sand-lime brick.

S. B. Downer of Macomb, Ill., is promoting a $25,000 sand-lime brick plant at Colchester, Ill. Henry Terrill and Harry Buford are interested in the enterprise.

The Cement Block and Roofing Co., Kenton, O., has been incorporated with $10,000 capital stock. John Herzog is president; Samuel Pfeiffer, vice-president and secretary; Wm. H. Lick, treasurer, and C. T. Wilson, manager.

A. S. Walrath, F. S. Wells and others are completing the organization with $10,000 capital to manufacture a high-grade face brick out of sand and cement at Des Moines, Iowa. The company owns the machine for making same.

The Minnesota Brick & Cement Co. of Henning, has filed articles of incorporation with $60,000 capital. Officers are E. P. Skahen, president; R. L. Hall, vice-president; G. H. Markham, secretary and treasurer.

The factory of the Camden (N. J.) Granite Brick Company was set in operation by the H. Huennekes Company about a week ago. The factory is located at Haddonfield, N. J., and the bricks are going mostly into the Philadelphia market.

The Hydraulic Stone & Brick Co., Milwaukee, Wis., has been incorporated with $80,000 capital stock by A. H. Spoor, Walter P. Potter, A. J. Pick and others. The company has been organized to take over a property at Janesville which the stockholders have been interested in.

The H. Huennekes Company is now setting in operation the factory at Janesville, Wis., constructed for the Janesville Granite Brick & Stone Company. The very first bricks turned out by this factory are beauties, and of the most excellent quality. They are sold at $15 per thousand at the yards. We shall have more to say about this factory in our next issue.

MISCELLANEOUS ITEMS.

The Alden Brick Company, Philadelphia, Pa., has been incorporated with $20,000 capital stock.

Macomb, Ill., is figuring on securing a brick yard which will have a capacity of 20,000 brick daily.

The McNeil Pressed Brick Co., Newberg, Ill., has increased its capital stock from $50,000 to $100,000.

The Clyde Brick, Tile & Peat Fuel Co. has been organized at Huron, S. Dak., with $150,000 capital stock.

M. Butler, of Houston, Texas, has transferred his property to the Butler Brick Works, a corporation, for $50,000.

O. Sulos, Little Falls, Minn., has received an order for 3,000,000 brick to be used in the construction of a dam.

J. E. McDonald, who went to Lock Haven, Pa., the first of the month to superintend the Queens Run Fire Brick Co.'s plant resigned and returned to Clearfield.

Brown & Schmidt have purchased the tile business of Oscar Marquis at Humboldt, Iowa, and will shortly move it to their lumber yard and conduct it.

As a result of suitable clay for making a fine quality of brick being found at Onondaga, Mich., Jackson men will organize a $20,000 stock company.

The Denver Tile Co., Denver, Col., has been incorporated with $50,000 capital stock by B. F. Priest, I. W. Priest and George O. Williams.

S. B. Cook has purchased the Mason (Mich.) brick and tile plant outfit of machinery and will move it to Twining, Mich., to put in the Cook Brick & Tile Co.'s plant.

The Perth Amboy (N. J.) Fire Brick Co., capital stock $100,000, has been incorporated by H. Armour Ward, Thomas L. Hughes and Chas. H. Warner, all of New York.

Final patents have been fully granted covering the "Martin" System of handling and drying Stiff Mud and Soft Mud Brick.

The Union Paving Co., Schenectady, N. Y., has been organized with $20,000 capital stock. Incorporators are Newton J. Kellan, Adam F. Schaffer, John McEncroe and Alpheus G. Davis, all of Schenectady.

The Lawrenceville Brick & Tile Co., principal office at Norfolk, Va., capital stock $25,000, has been incorporated, G. Tredwill president, G. R. Swink vice-president, W. C. Archer secretary and treasurer, all of Norfolk.

The American Ceramic Corporation, New York, has been incorporated with $200,000 capital stock. Directors are, Charles Stegmayer, of Jamaica; L. A. Richter, of Glendale, and Theodore Blogg, 321 Second avenue, New York.

The Perth Amboy Fire Brick Co. has been incorporated at Jersey City, N. J., with $100,000 capital stock. The incorporators are: H. A. Ward, Thos. L. Hughes, and Charles H. Warner, all of New York.

The New Era Gas Engine, made at Dayton, Ohio, is meeting with great success in brick yards throughout the states. Read what one of their users says on page 51 of THE CLAY RECORD.

Grant Holdridge, Gridley, Ill., has had his tile factory taken down preparatory to moving it to Corinth, Iowa.

J. C. Hailey, Humboldt, Tenn., is expecting to locate an ice factory and brick yard at New Decatur, Ala., in the fall.

Dr. S. A. Scott is at the head of a move to have a brick plant at Lake Village, Ark. The plant will cost $1,500.

John B. Rose, president of the Rose Brick Co., Roseton, N. Y., is being prominently mentioned for state senator.

William H. Knoke has purchased the interests of his partner, John Sherman, in the tile business near Oakwood, Ohio, and will operate same under his name.

The St. Clair (Mich.) Brick & Tile Co. has been incorporated with $40,000 capital stock. C. H. Lord is head of the company. The old Charles Sheldon plant is taken in.

Shaefer Bros., Carlisle, Pa., contractors, have been awarded the contract for 15 tunnel brick dryer house for the Philadelphia Clay Co.'s plant at Poland, near Hunters' Run.

The Bolivar (Tenn.) Brick & Tile Co. has filed an amendment to its charter increasing its capital stock from $4,000 to $7,500.

Grim Brothers, South Allentown, Pa., are again making brick at their plant. Fire destroyed this plant last November and it is just starting, making 30,000 brick daily.

The D'Hanis (Texas) Brick & Tile Co. has been incorporated with $20,000 capital stock by Lewis Carle, F. J. Carle, R. Wabrett, C. Wabrett and Gus. Birkner.

The Standard Brick Co., Huntsville, Ala., has suspended operations again and the manager, William Smalley, has gone to Indiana. A. M. Booth is in charge of the affairs.

The Alliance (Ohio) Clay Products Co., the capital stock of which has just been subscribed, are prospecting for a desirable location at that place.

The Western Brick & Construction Co., Denver, Colo., has been incorporated with $50,000 capital stock by Charles R. Knight, Amon Olson and J. M. Schriever. The plant will be at 1925 East Jewell street.

E. C. Belknap, vice-president and general manager of the Estacada Brick & Tile Co., Portland, Oregon, has just returned from the East where he purchased machinery for the plant which will be installed at Estacada, at once.

Mr. Frampton, of Willard, Kansas, has been secured as the manager of the Phillipsburg Brick Works. New machinery is being installed and the plant being put into a profitable position.

The Graystone Fire Brick Co., Everett, Wash., with works near Bellingham, is to build a $40,000 fire-brick plant. C. W. Stone and Edward Mills, of Everett, and W. F. Gray, of Lowell, are the incorporators; capital stock $100,000.

Mr. James Florey, East Downingtown, Pa., has just contracted for a "Martin" System of handling and drying soft mud brick, this being the third contract he has placed with the Henry Martin Brick Machine Manufacturing Company of Lancaster, Pa., for equipments of this class.

A. J. Marquis, Middleburg, Ohio, has completed the remodeling of his tile factory.

The Spring Garden Brick Manufacturing Co., York, Pa., have just installed a new outfit of the "Martin" System.

The Choctaw Pressed Brick Co., Mansfield, Ark., will increase its plant to 80,000 brick per day capacity.

A rich vein of kaolin has been found on the farm of Frank Muhl, just east of Salem, Ind., and parties are investigating it, expecting to prepare it for the market.

At a cost of $35,000 a railroad is being constructed to connect the pit and the factory of the Illinois Manufacturing Co., at Macomb, Ill.

The Geneva, O., Brick & Tile Co., has bought the plant from A. E. Mitchellson. They will increase the capacity of the yard and run it on full time.

Arthur Hadley, Danville, Ind., has struck a bed of fine shale on his farm that is 186 feet deep and is considering the construction of a brick plant.

The United States Clay & Mineral Manufacturing Co., St. Louis, Mo:, has been incorporated with $50,000 capital stock by John C. Bonnell, F. C. Francis, Frank H. Neff and Theodore Stegner.

Commissioner Haarer, successor to Maybury, of Detroit, Mich., has made a trip through Ohio to see brick plants and brick-making machinery so he can pass upon the bids for the new city brick plant which will be readvertised.

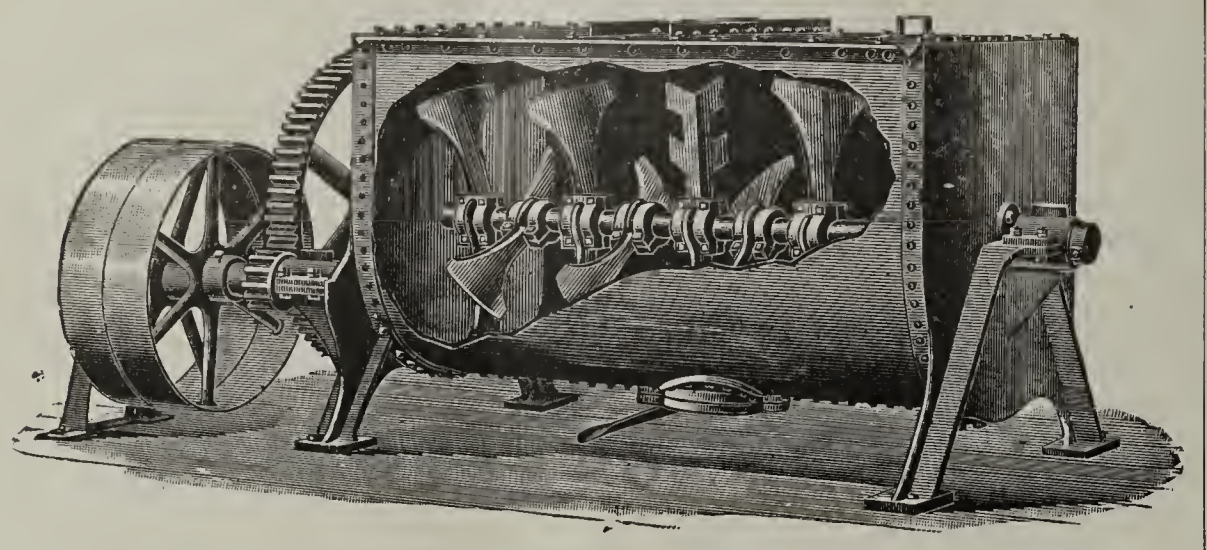
Messrs. Grim Bros., Allentown, Pa., have just started up the new "Martin" System of handling and drying soft mud brick, together with a modern outfit of "Martin" machinery, installed by the Henry Martin Brick Machine Manufacturing Company, Lancaster, Pa.

The Unionville (Mo.) Brick Works perfected its organization and elected Lee Collins, president; S. N. Monroe, vice-president; Frank Middleton, secretary, and S. H. Jackson, treasurer. The machinery has been shipped from Warsaw and is being set up southwest of the city.

The Rochester-German Brick and Tile Company, Rochester, N. Y., are equipping their plant with a "Martin" Improved Delivery and Soft Mud Dryer System, which they expect to have in operation within a few weeks, and which will be installed by the Henry Martin Brick Machine Manufacturing Company of Lancaster, Pa.

The Niagara Cement Co., 672 Ellicott Square, Buffalo, N. Y., has been incorporated and will build a large plant in that city. The officers are: William B. Ruggles, of Bayonne, N. J., president; John P. Seymour, of New York, vice-president and general manager; William B. Reading, East Aurora, N. Y., treasurer, and C. A. Collins, secretary.

The Eggers Brick Company, Cleveland, Ohio, are completing a new equipment, including the new system of handling and drying soft mud brick, installed by the Henry Martin Brick Machine Manufacturing Company of Lancaster, Pa. The new installation includes a "Martin" heavy style "A" Machine, with Pug Mills, Disintegrators, Granulators and the "Martin" Delivery System.



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Brick Yard for sale cheap. A bargain to the right party. Good market at hand. For further information address

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Capacity ten to twelve million brick a year. Inexhaustable supply of best quality clay and sand. Railroad switches in plant, first-class machinery, Sharer dryer. Good market for brick. Easy terms and at a price that makes the plant a rare bargain. Located on the Erie R. R. We invite correspondence and inspection of the work.

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Profitable running brick plant, 25,000 capacity. Ready sale for entire product. Owner has larger interests requiring attention

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One second-hand Hercules Special Brick Machine, manufactured by Horton Mfg. Co. Capacity 30 to 40 thousand per day. Machine in first-class condition. Located in central Pennsylvania. Address

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Iron Quaker Brick Machine, manufactured at Wellington, Ohio. Used but little. Cost about $500. Taken under mortgage and will sell for $150.

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For sale, reasonable, in condition—
One 5x18 foot Horizontal Tubular Boiler.
One No. 20A Penfield Hollow Brick Machine.
One 14 foot Pug Mill.
One Disintegrator,
One 40 foot Clay Conveyor, with 20 foot belt.
Forty Fire-proofing Dies, with two extensions, pullys, clutches and belting.
Reasons for sale, are making different ware.

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Drain Tile and Brick Plant for sale Good machinery. Good location. Plenty of clay. Price $2300, small payment down, long time on rest. Will take product as pay. Address

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A 20,000 capacity brick and tile plant, located in good Michigan town. Has Stewart patent kilns, plenty of drying sheds, all machinery in good condition, fine clay, good market, established business. Price very reasonable. Address

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Also 55 flat cars for soft mud brick, with foot pallets Track gauge 25 inches.
Both styles of cars in first-class repair.

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A second-hand No. 2 Giant Auger Brick Machine. Address

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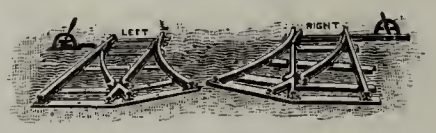

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One 4-Mold Dry Press, very cheap. Good as new.

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WANTED, WILLIAMS' PULVERIZER.

Wanted, a second-hand, small size Williams Hammer Pulverizer. State best price and condition.

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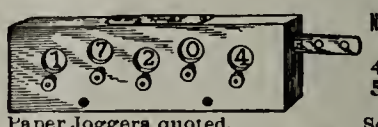

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One 12-foot Pug Mill. One American Clay Machinery Co.'s Brick Machine. Raymond Repress. Iron Brick Cars. Pallets. Etc.

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Brick plant in Mississippi town of 5000 population. Plenty of good clay and big demand for brick. Reason for selling owner can't give personal attention. Address

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Engine for sale—One 14x18 inch 80-horse power Frost Engine. Only used a short time

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Two 4-mold style "F" American Clay Machinery Co. Dry Presses, in good order. Have made about one million brick. Reason for selling is that clay is not suitable for dry press brick. A bargain for some one.

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Wanted, a competent man to manage a brick plant, capacity thirty thousand per day. Must understand the running and care of machinery and management of men and the manufacture and burning of common and high grade repress brick. Applicant to state experience, salary required and give reference. A permanent position will be given to the right man.

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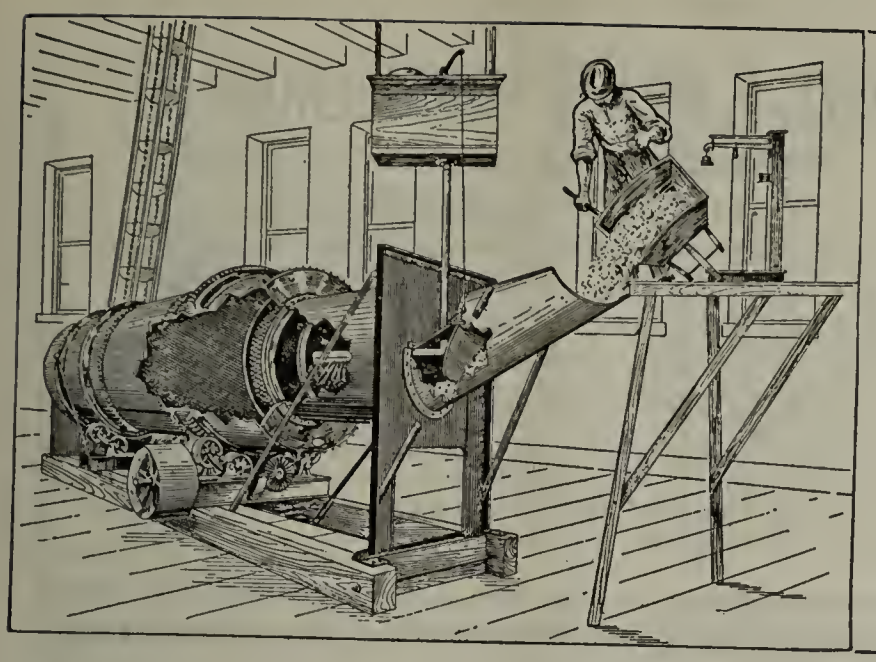

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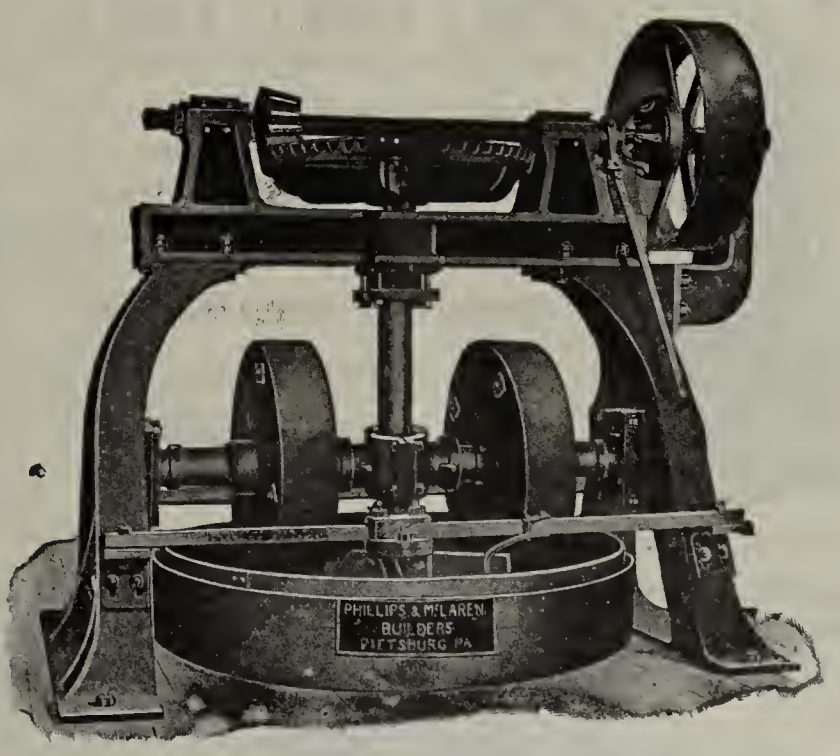

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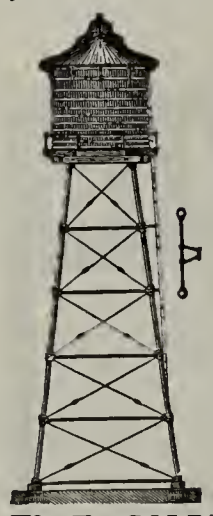

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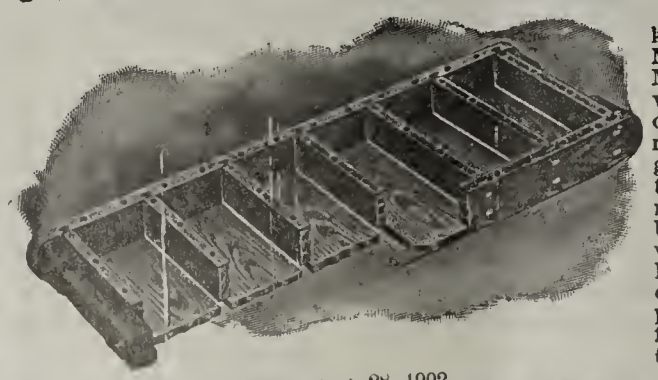

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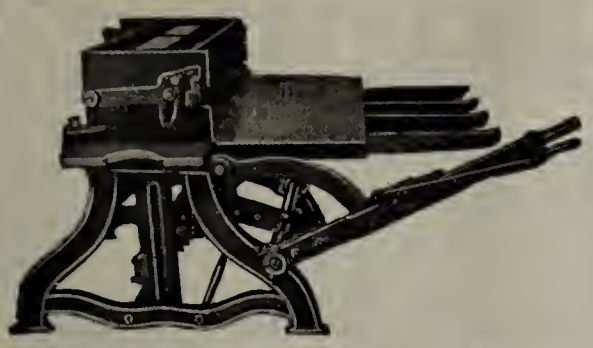

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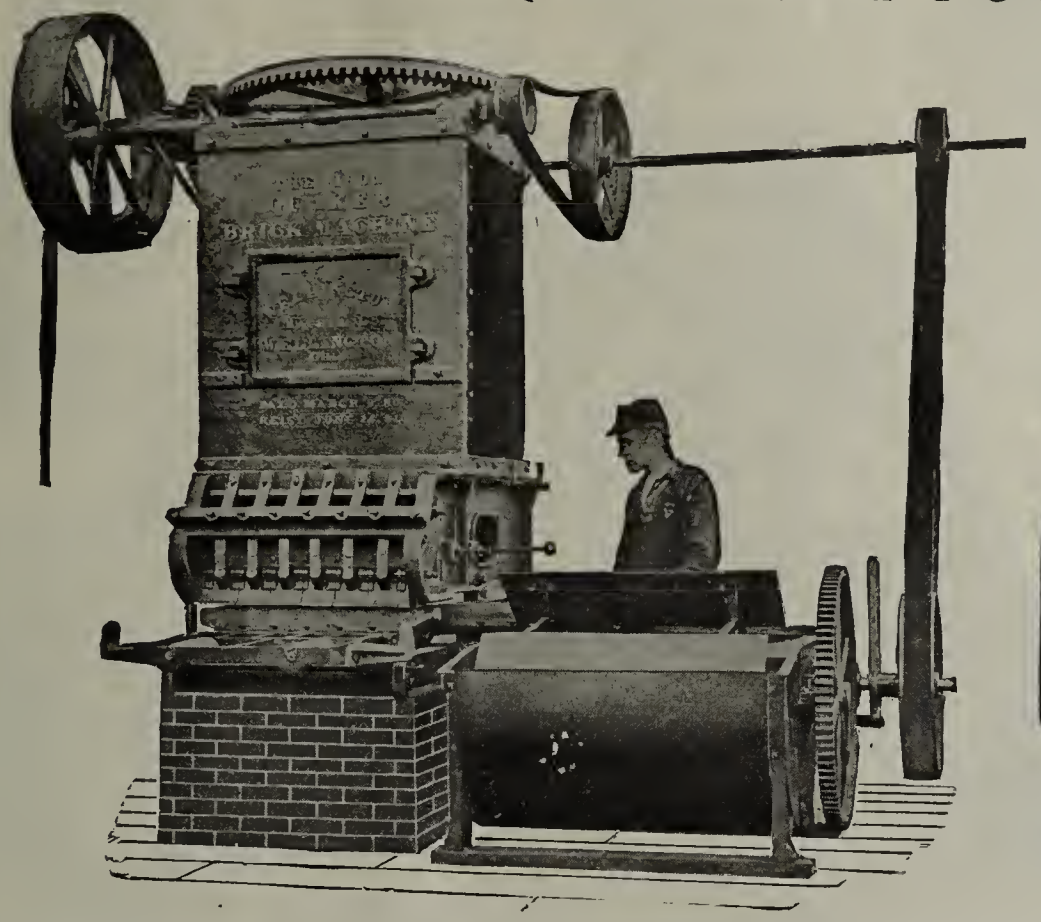

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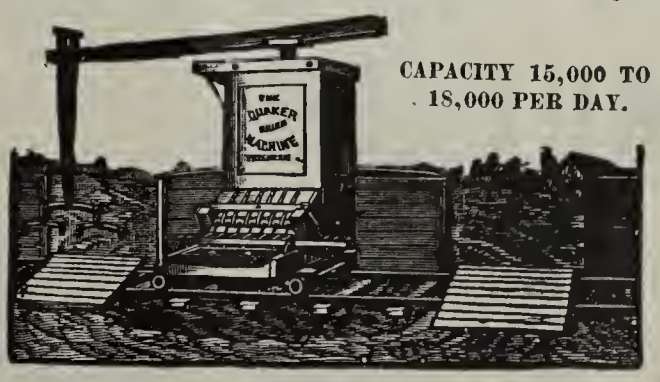

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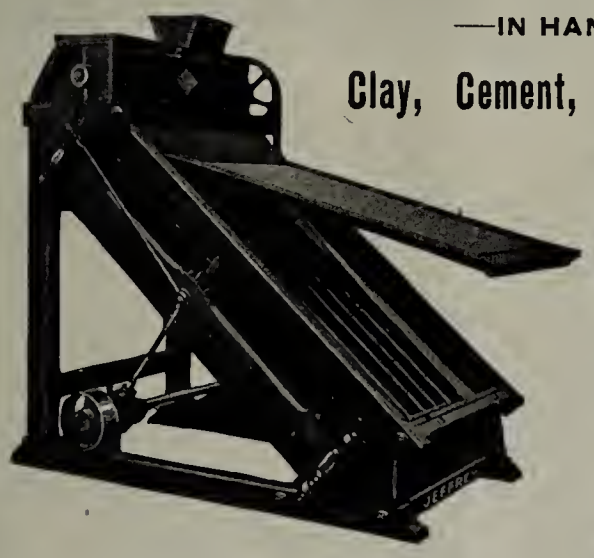

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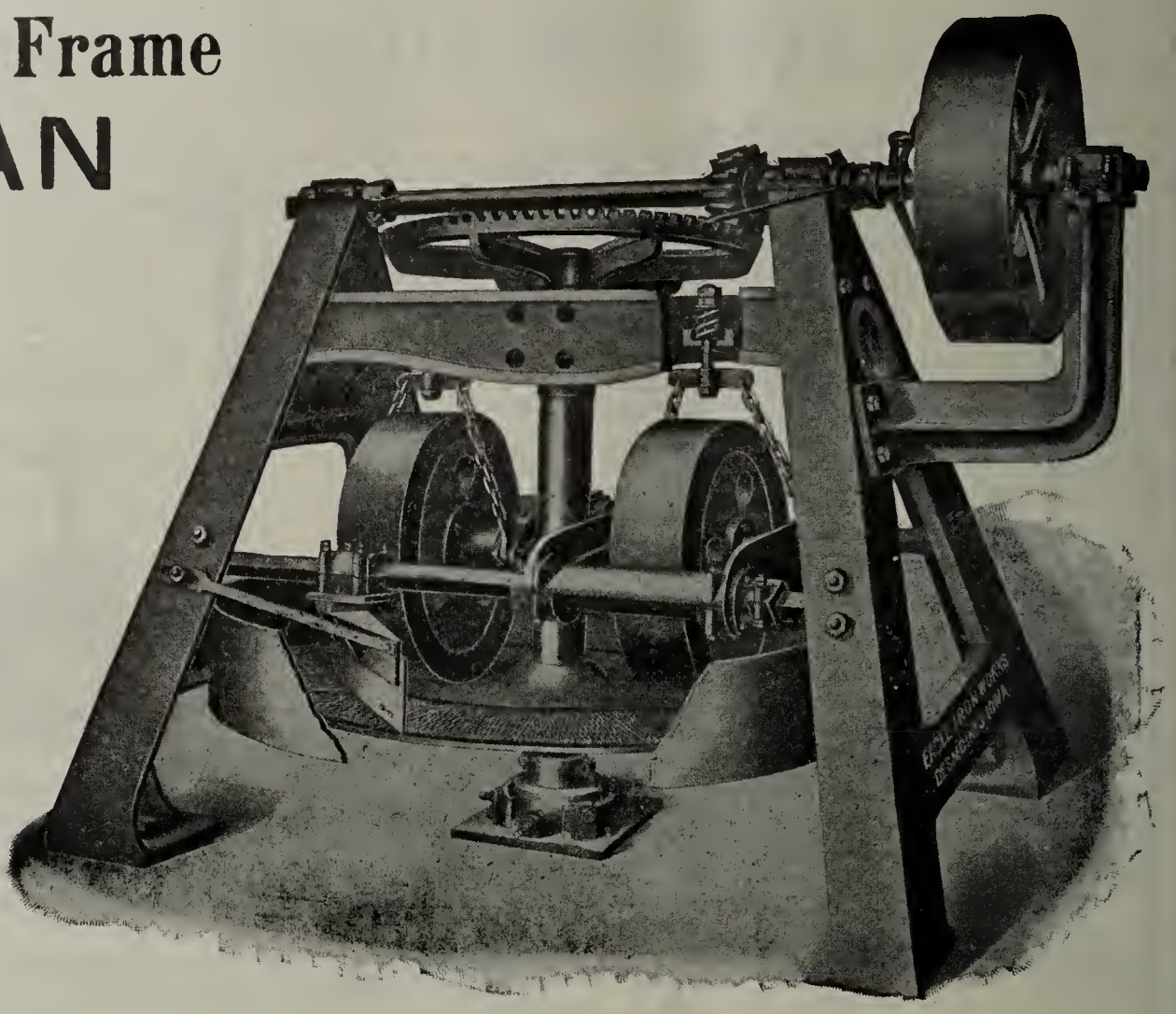

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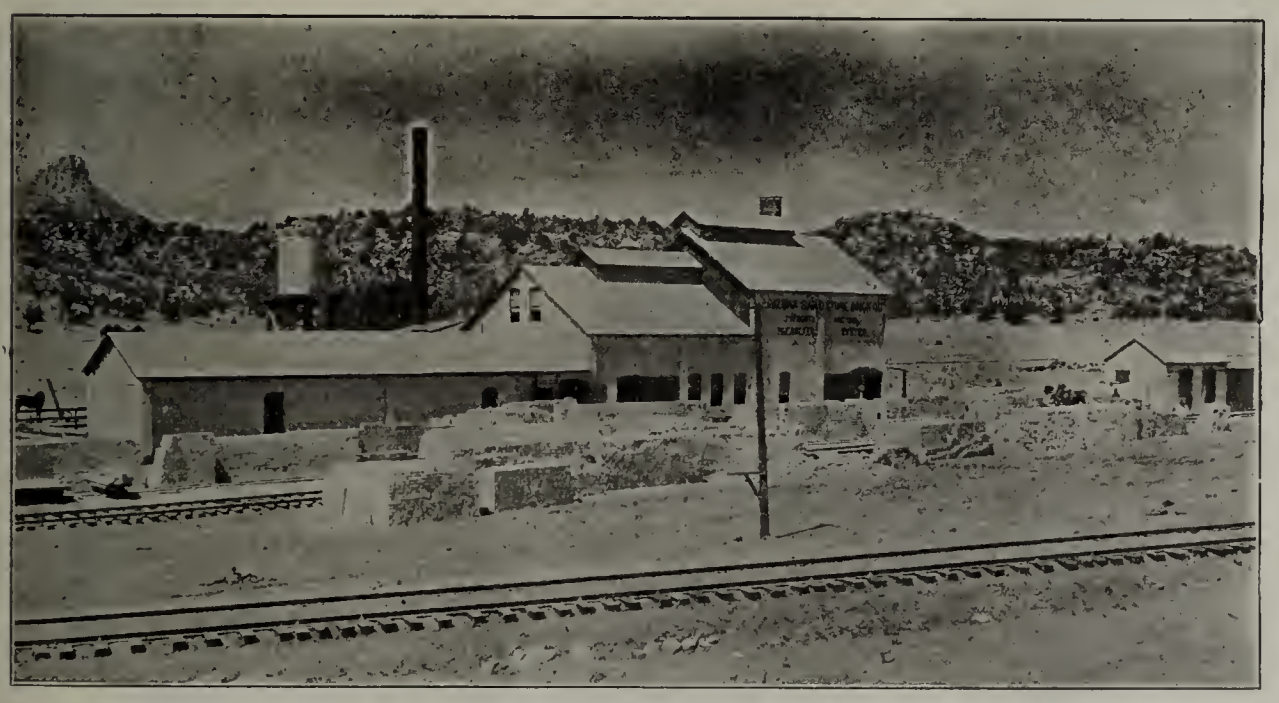

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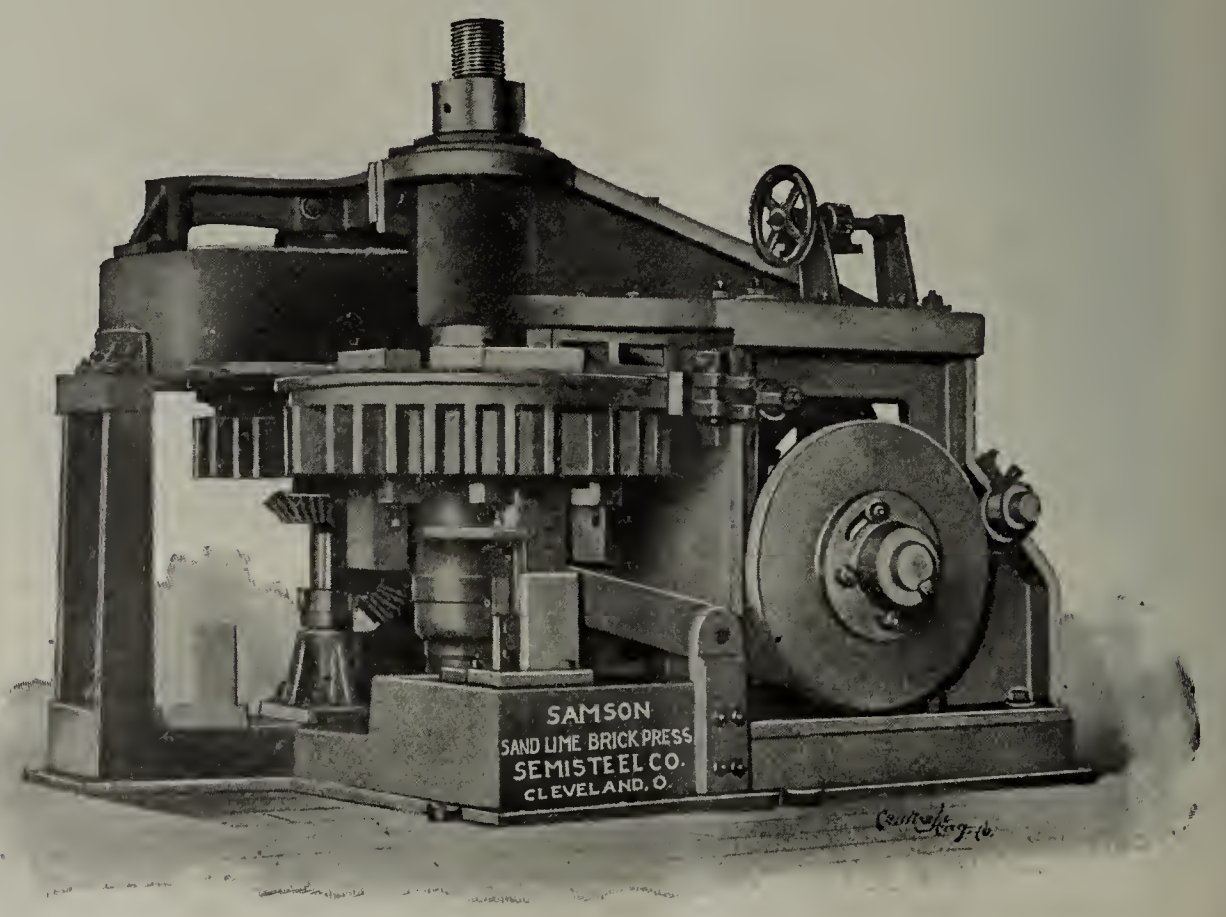

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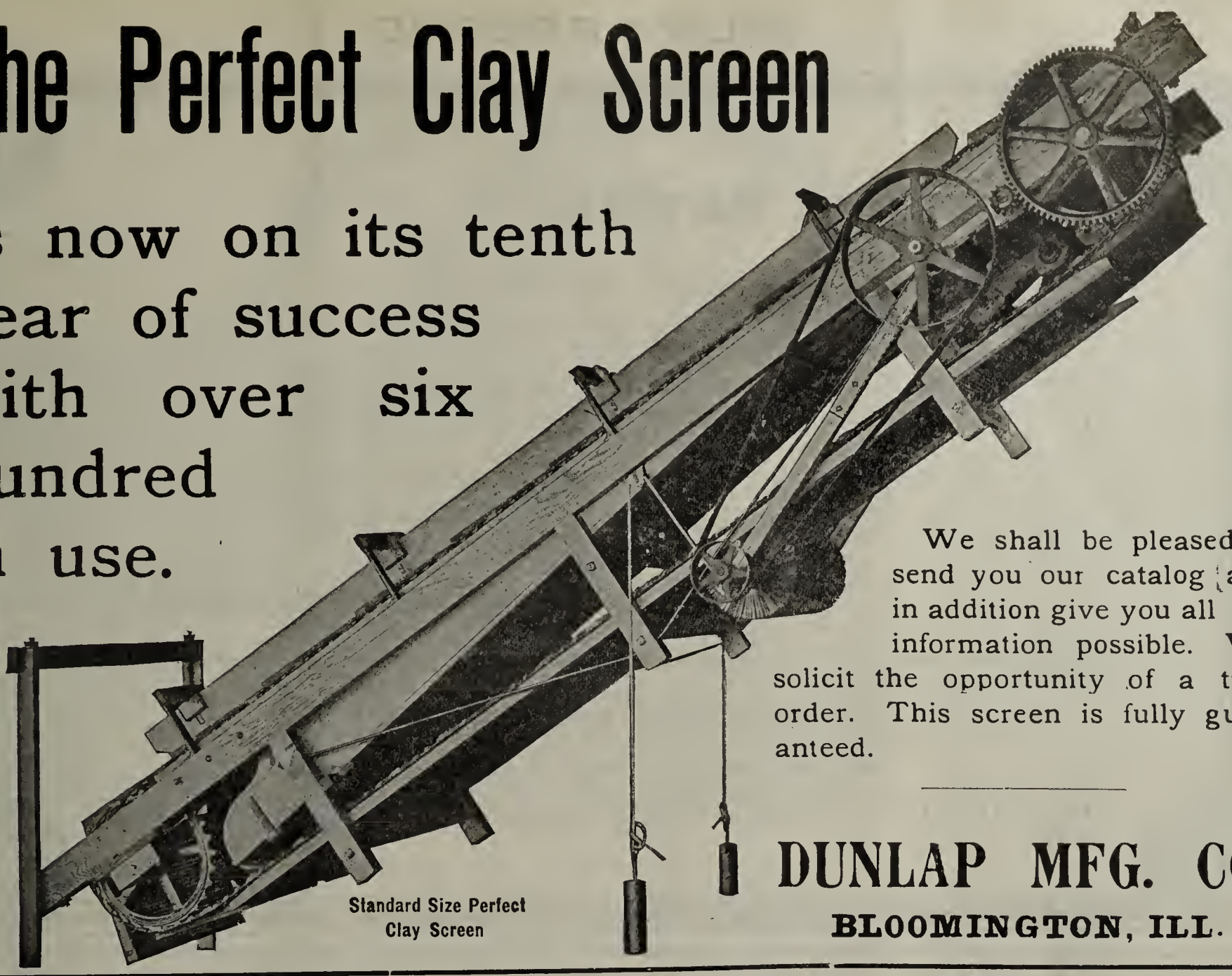

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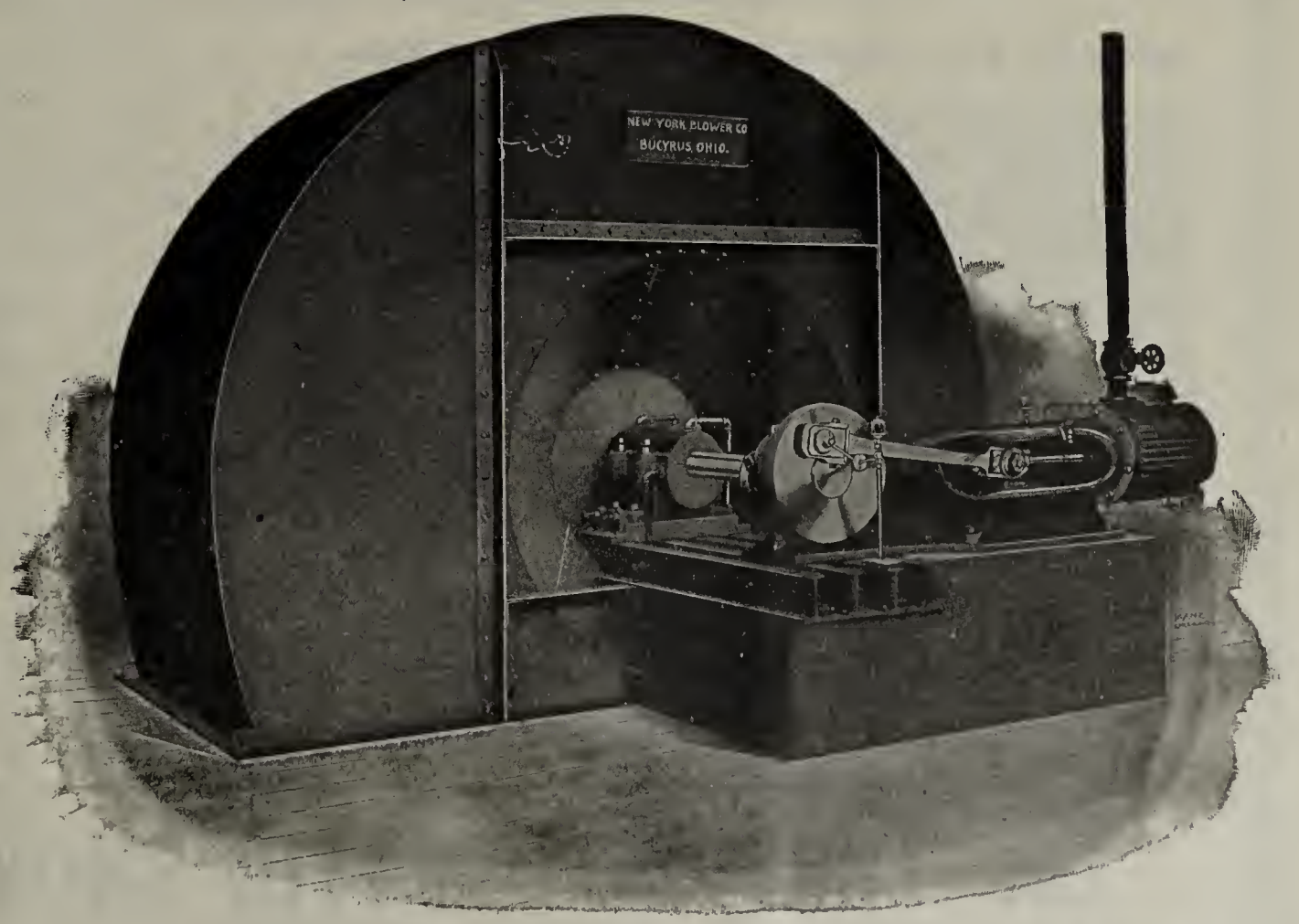

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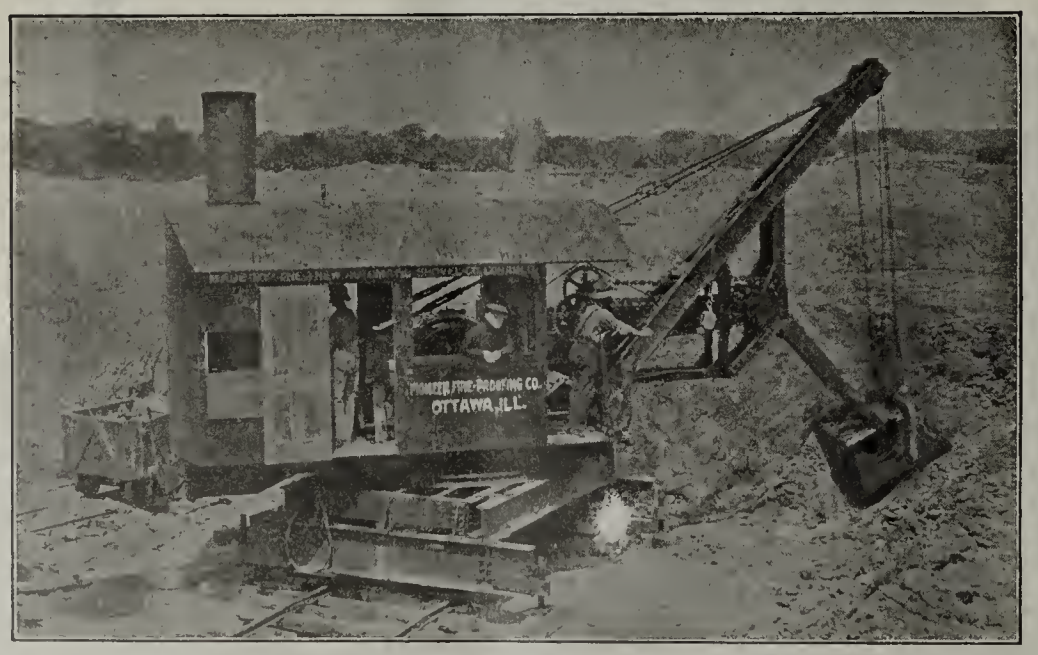
Made In Four Sizes. Mounted on Car Wheels or Traction Wheels.



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Operated by one man for outputs up to 125,000 brick per day.

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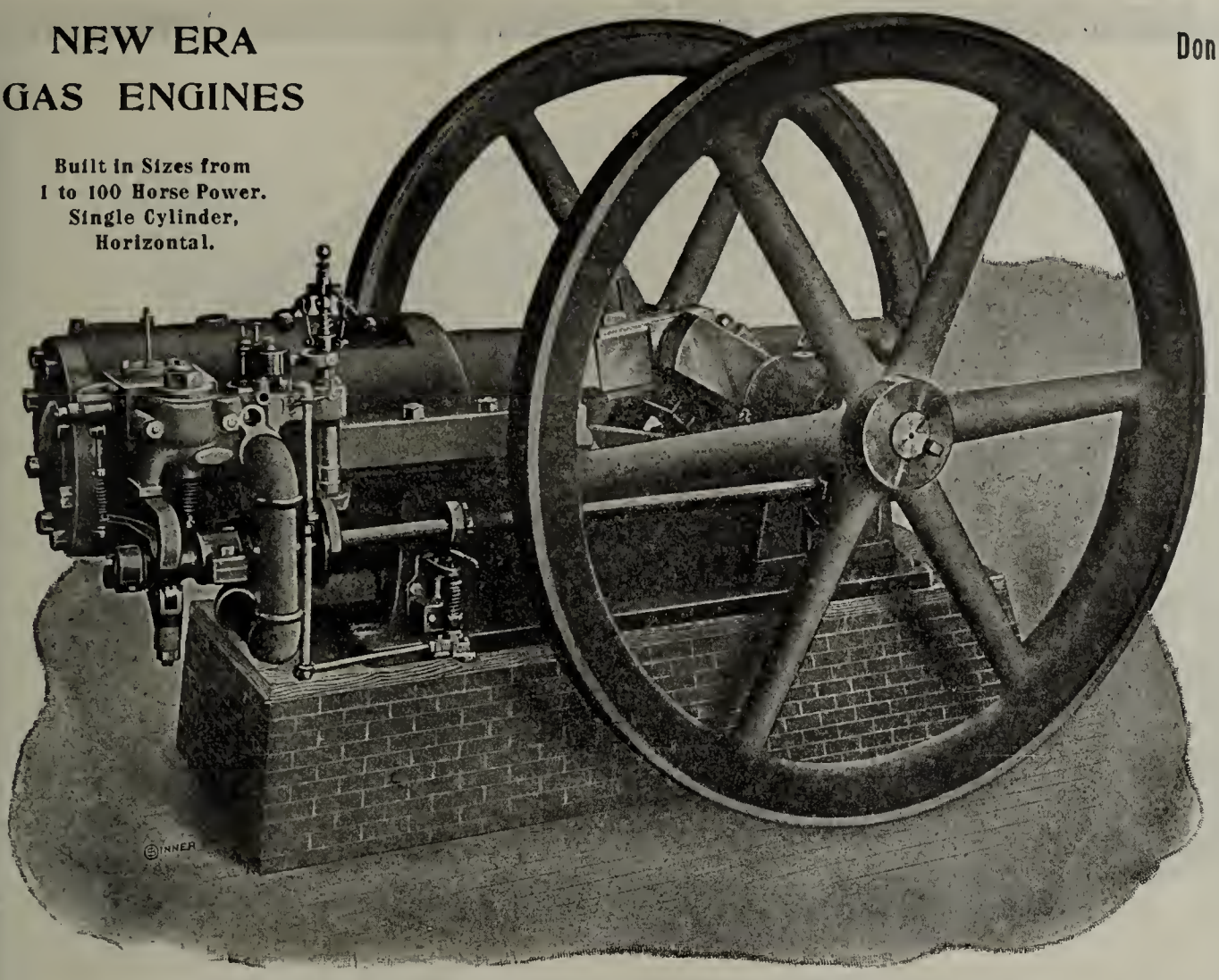

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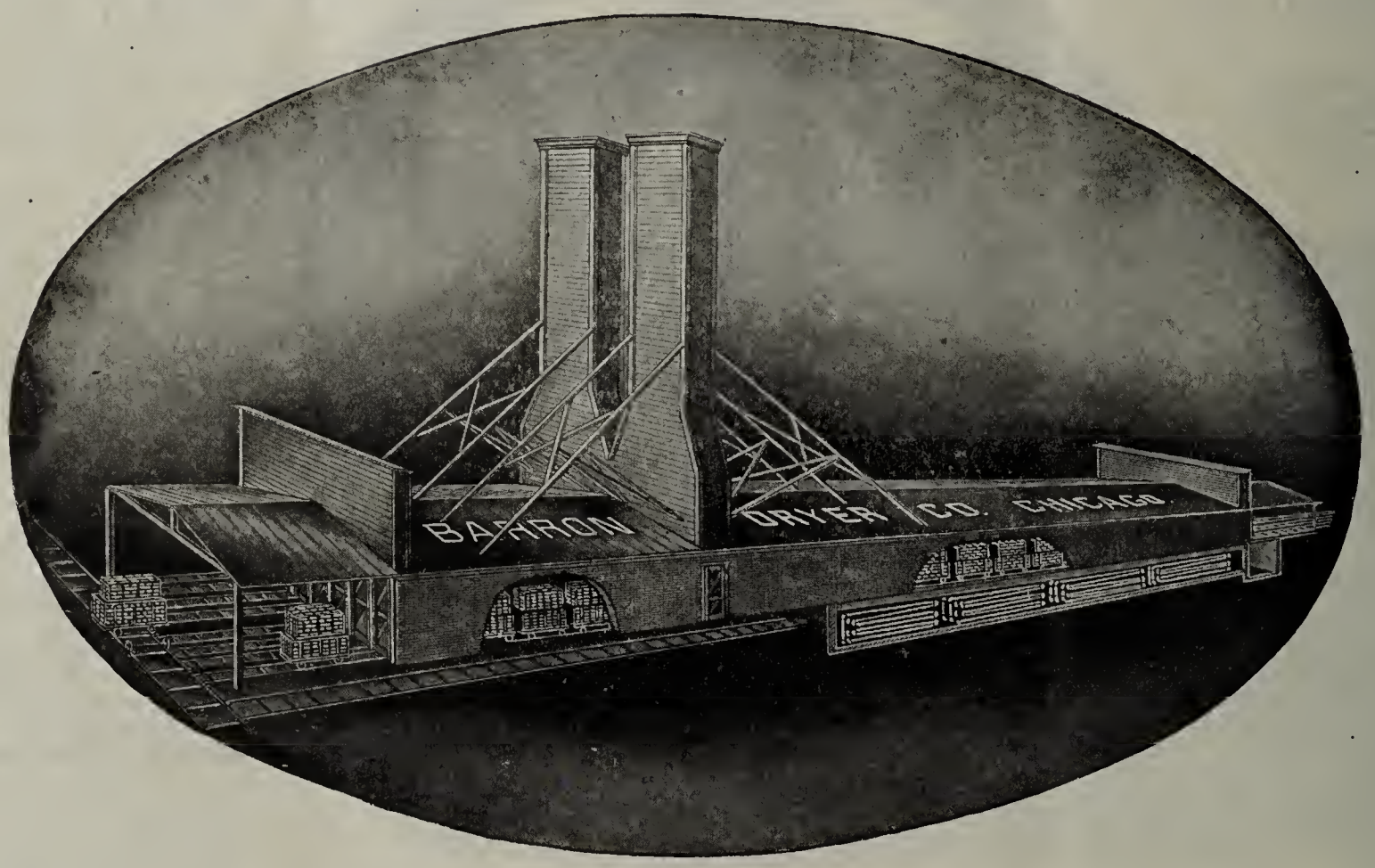

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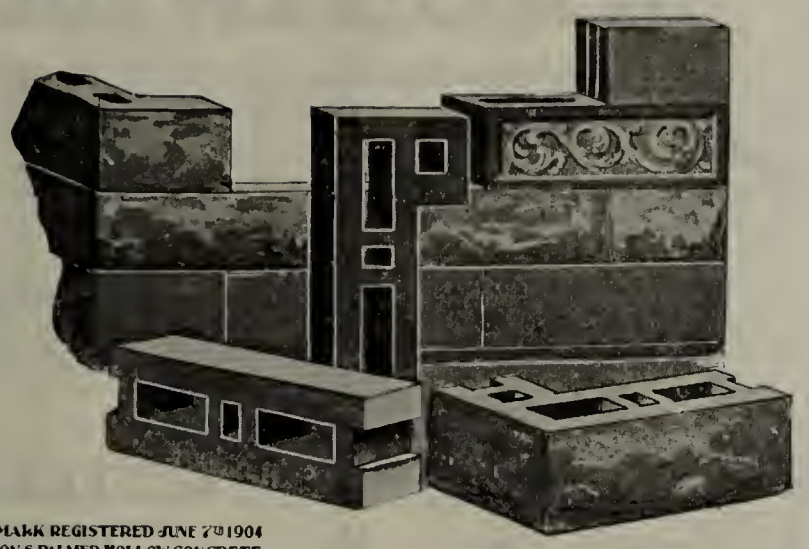

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It was invented by a **practical** builder who knew what was necessary.

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It is not a cumbersome and bungling piece of mechanism.

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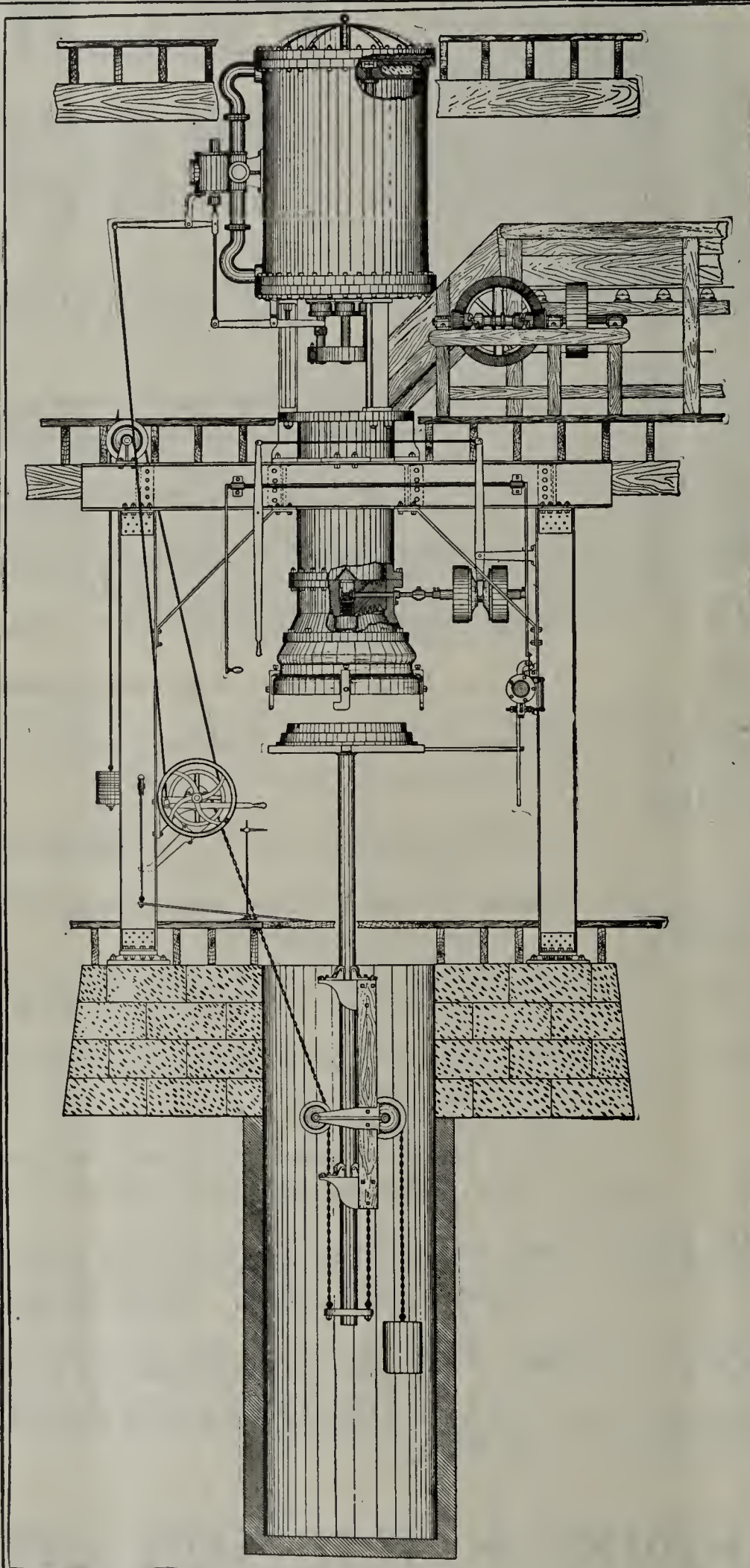

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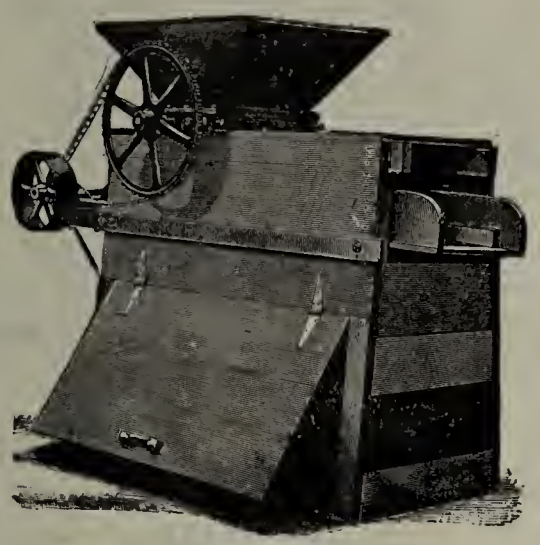

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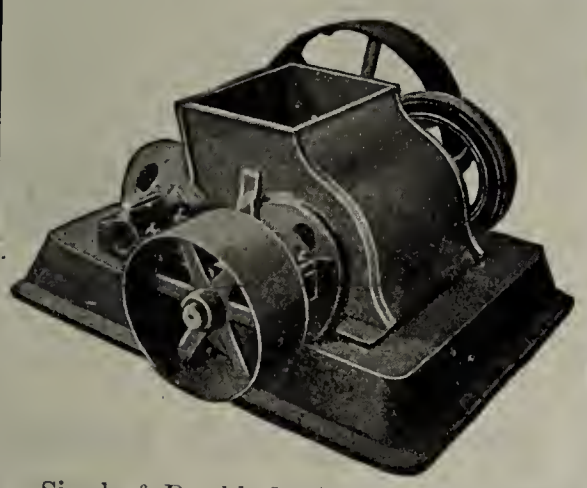

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Not How Cheap
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How Good

— Is the consideration in the manufacture of the MARTIN Machinery. We are fully convinced that it pays to put the best of material and workmanship into everything pertaining to the Brick plant.

Cheapness in the first cost is often more than overcome by the monthly repair bills, and at the end of the season "The Best is the Cheapest."

Our Engineering Dept. will design a complete equipment and submit for approval, with detail estimate, if you are interested.

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if you need a Dryer equipment

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Clay Working Engineers.

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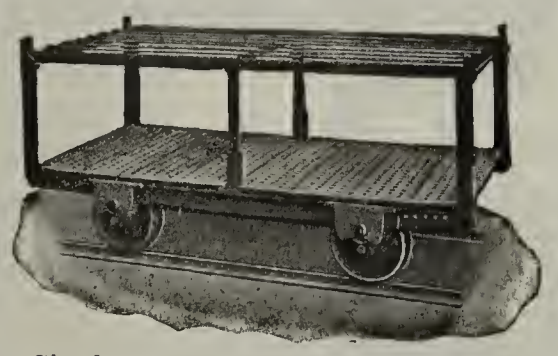

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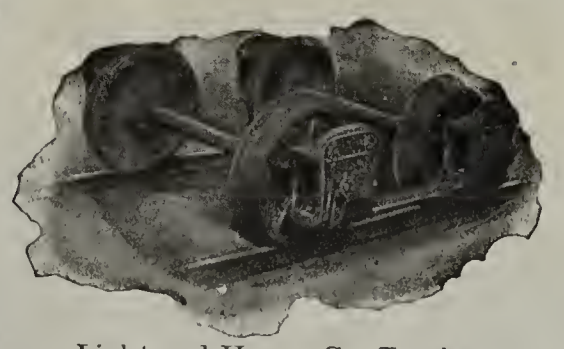
Burn out the Vegetable matter.



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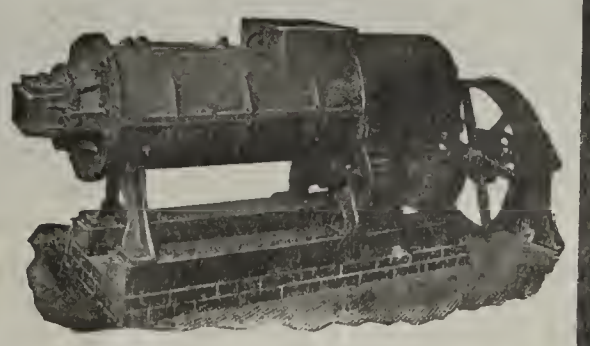
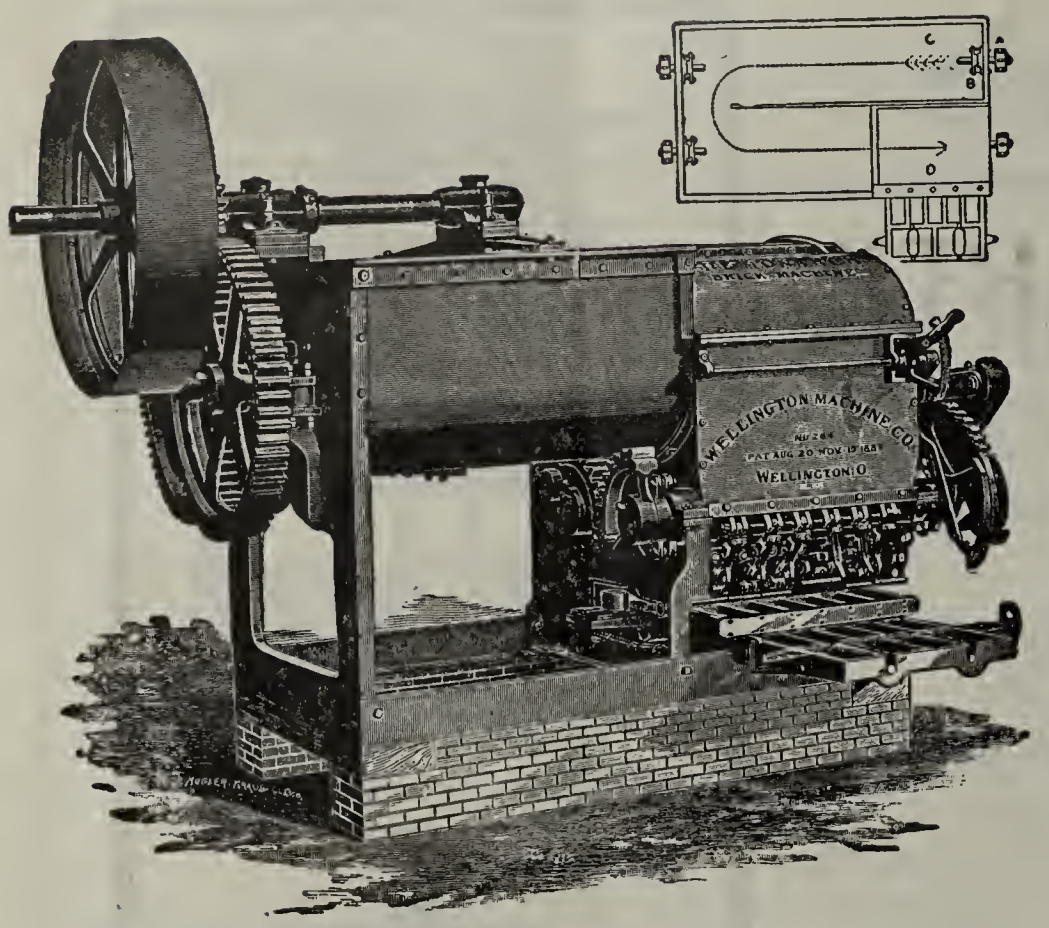
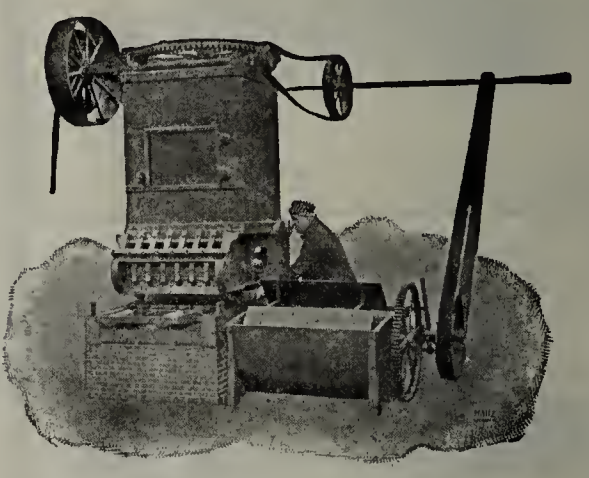


No. 1 Auger Machine.

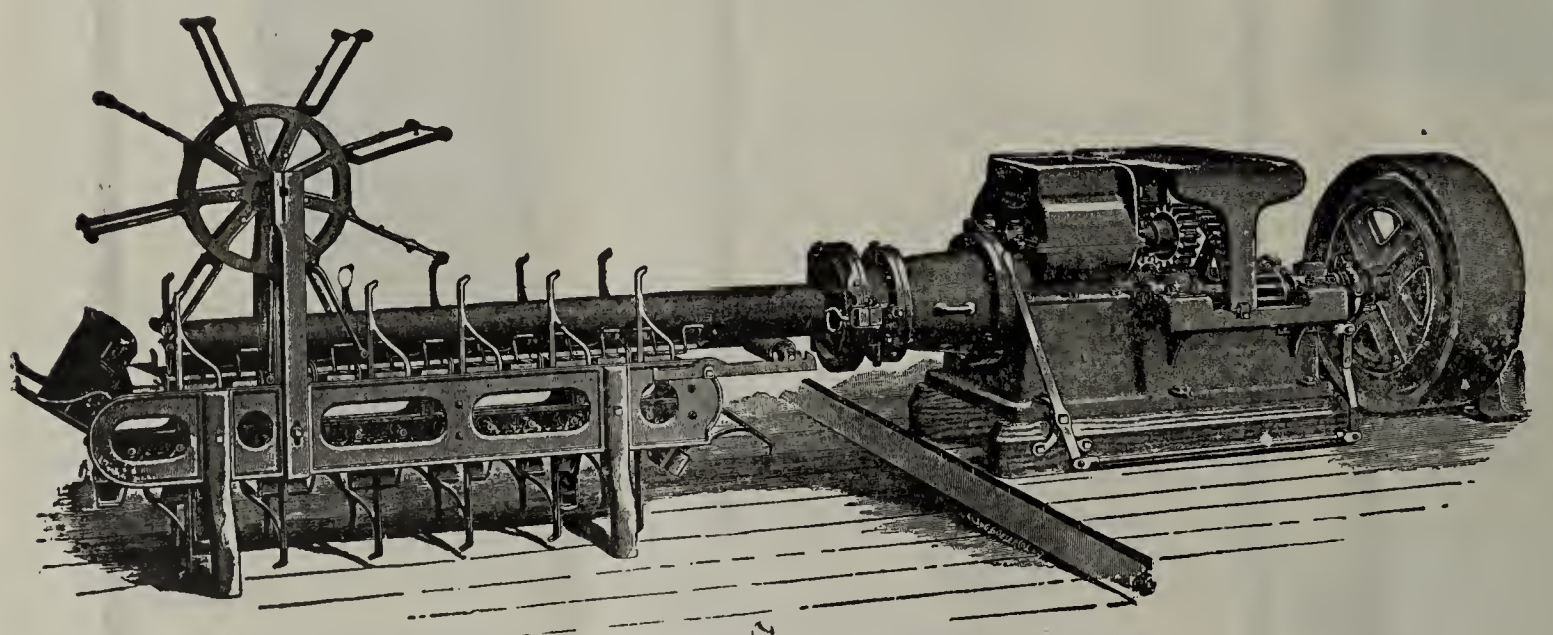
BRICK and TILE MACHINERY



MONARCH STOCK BRICK MACHINE
Capacity, from 30,000 to 50,000

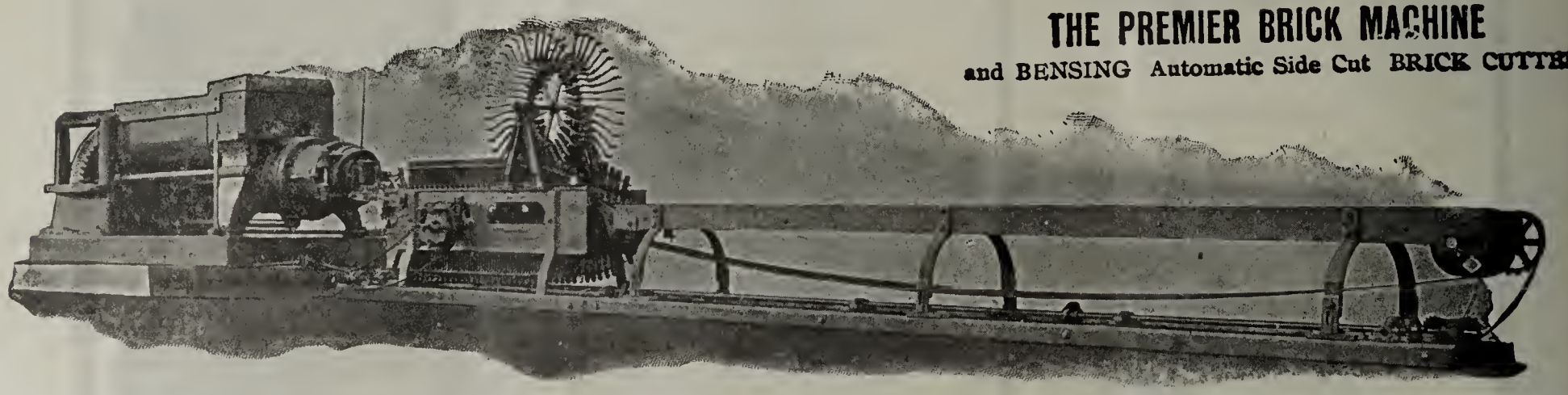


THE QUAKER
Horse or Steam Power. Capacity, 20,00 to 35,000



BRICK OR TILE MACHINE, WITH AUTOMATIC TABLE

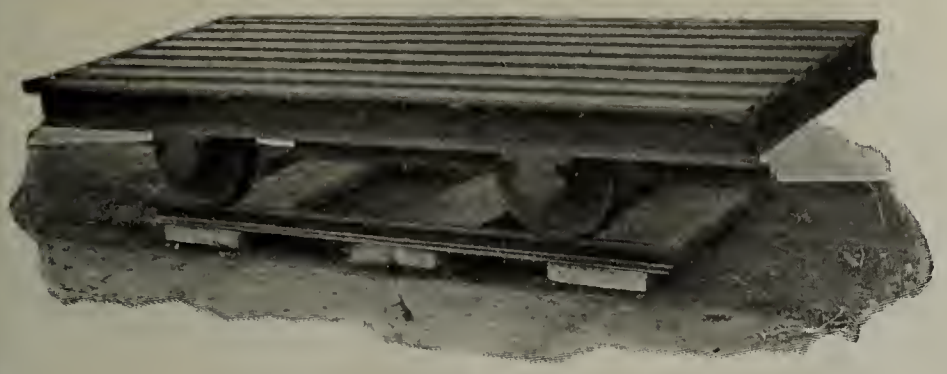
"We Fulfill our Guarantees."



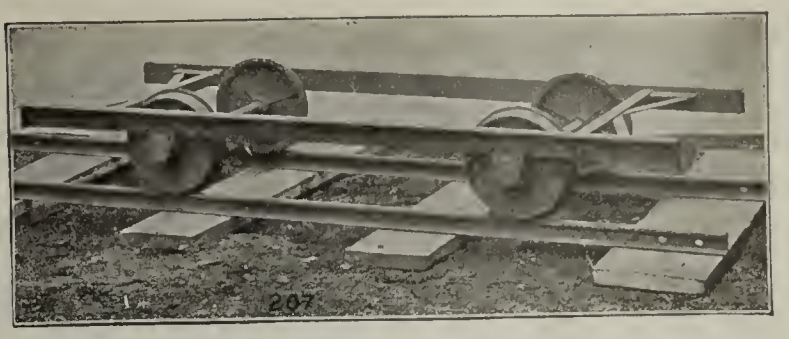
THE PREMIER BRICK MACHINE
and BENSING Automatic Side Cut BRICK CUTTER

We have a full line of Clay-Working Machinery, sand mold brick machines, auger brick and tile machines, Automatic side and end cut tables, dies, molds, barrows, trucks, sanders, represses, pug mills. *The only down cut, reel side brick cutter on the market for cutting face brick that do not require repressing.* We can guarantee to make you a better face brick with this cutter than you can get from any other cutter on the market.

B. E. LaDOW, 701 Dwight Building, KANSAS CITY, MO.



No. 212.
STEEL DECK CAR, CHANNEL FRAME.
For Drying Brick, Sewer Pipe, Etc.



No. 207.
FLAT CAR, WOODEN DECK.
For Brick, Tile, Etc.

No. 52.
TRUNION DUMP CAR.
For Handling Coal, Sand, Ashes, Etc.

The Cleveland Car Company

West Park -:- Ohio

Designers and Builders of

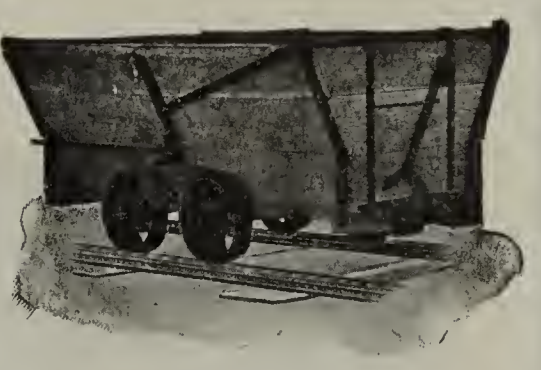
Complete Equipment for Narrow Guage Railroads

No. 50.
ONE SIDE DUMP CAR.
For Dumping Into Dry Pans, Disintegrators and Crushers.

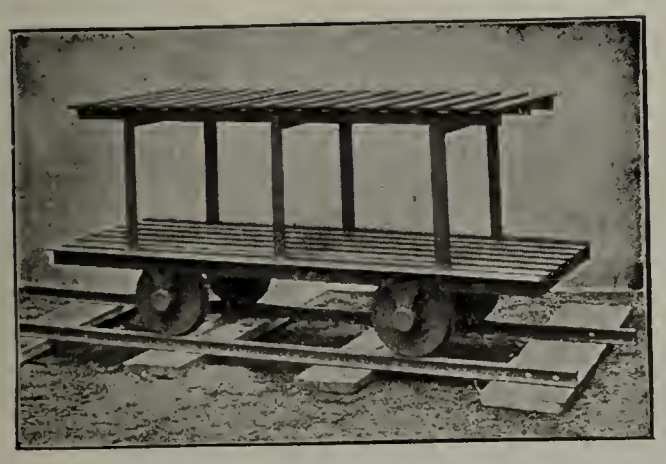
No. 523.
RACK CAR, HEAVY TYPE.
For Use With Coke Oven, Furnace and Cupola Block.

Dryer Cars of Every Description, Dump Cars, Turn Tables, Transfer Cars, Switches, Frogs, Rails, Etc.

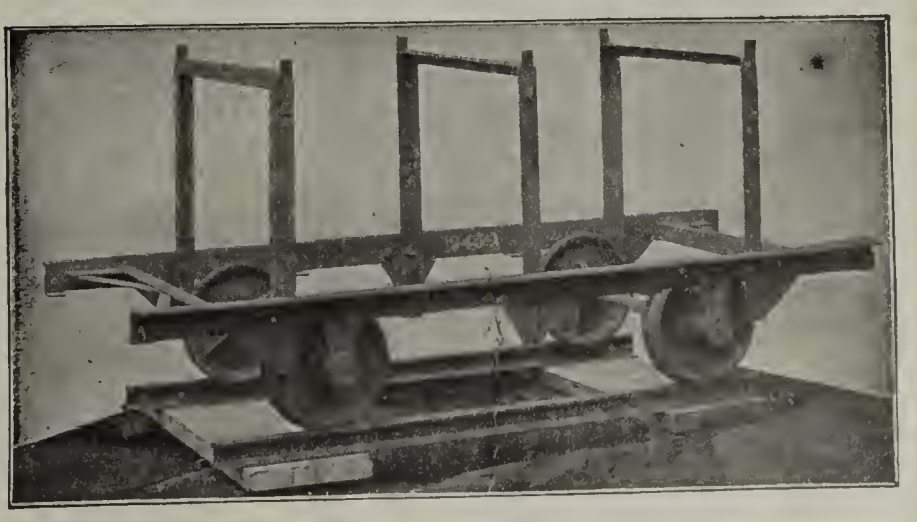
Overhead Trolleys, Kiln Doors, Furnace Fronts, Grate Bars and Brick Barrows : : : :



No. 31.
END DUMP CAR.
Adapted to Handling Coal, Shale, Sand, Etc.

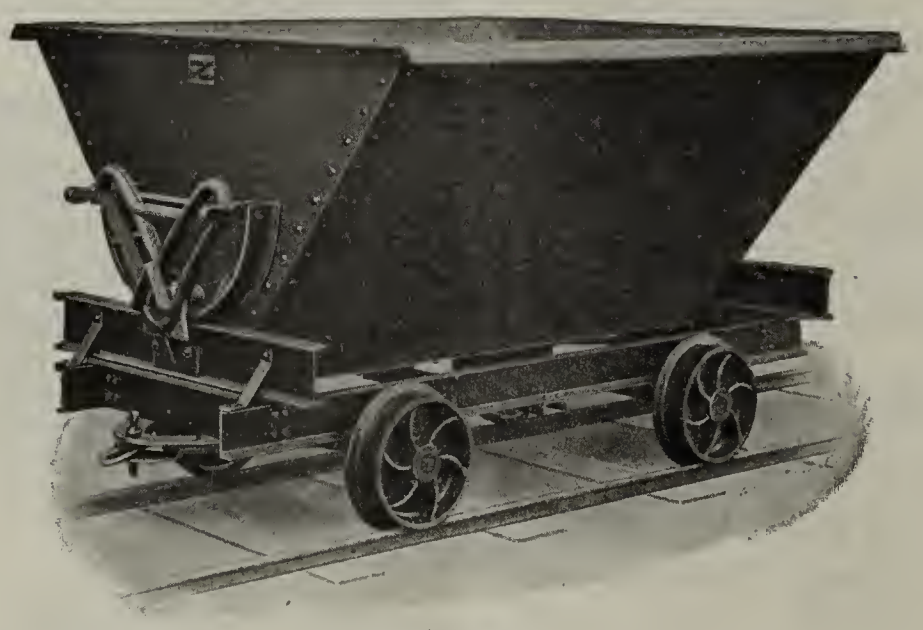


No. 244.
DOUBLE DECK CAR, STEEL DECKS.
For Brick, Tile, Fire-Proofing, Etc.



No. 245A.
DOUBLE DECK CAR, WOODEN DECK.
For Brick and Other Clay Products.

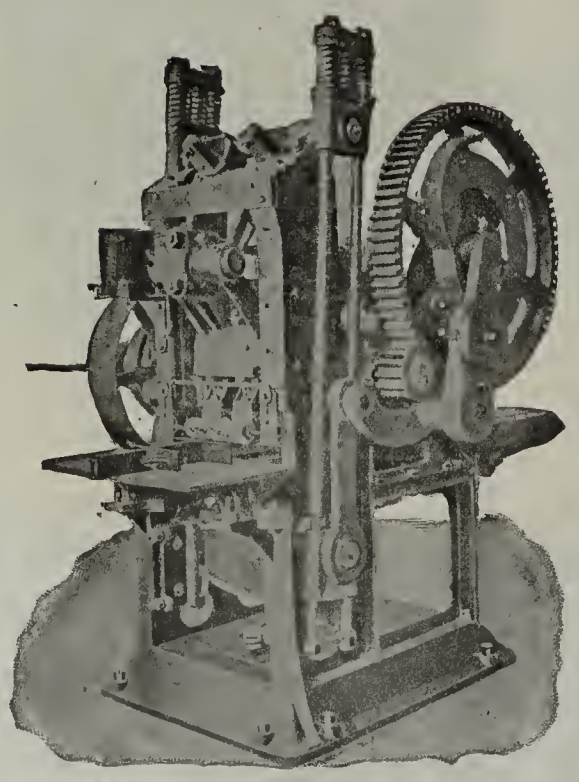
Are Your Clay Cars Satisfactory?



Clay Car.

If not, we can send some which we guarantee will be. They have no chains or pins to get lost or broken, cars cannot overdump, are self-locking, self-centering, easy running and durable.

We also build dryer cars of all kinds for all purposes.



Richardson Double Die Repress.

The Richardson Repress has all the features of merit that are demanded of a machine of this kind. Has enough depth of mold to make the largest size paving brick. All the working parts are above dies out of the way of waste clay. It has a slow pressing movement with double pressure, bringing out distinctly all markings and lettering. The working parts are adjustible to wear. It requires very little power and costs little to keep in repair.

Kindly write us for catalogs and full information.

The Ohio Ceramic Engineering Company

50-56 Fall Street, Cleveland, Ohio.

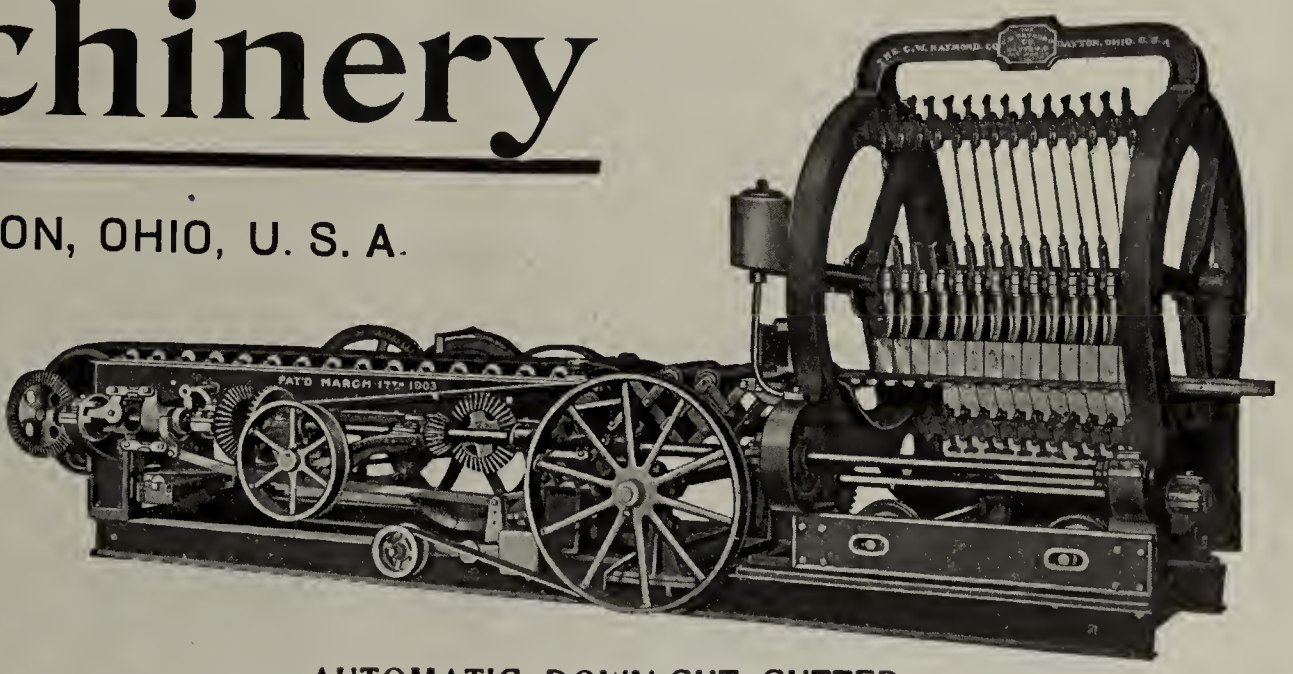
COMBINATION BRICK MACHINE

THE C. W. RAYMOND CO

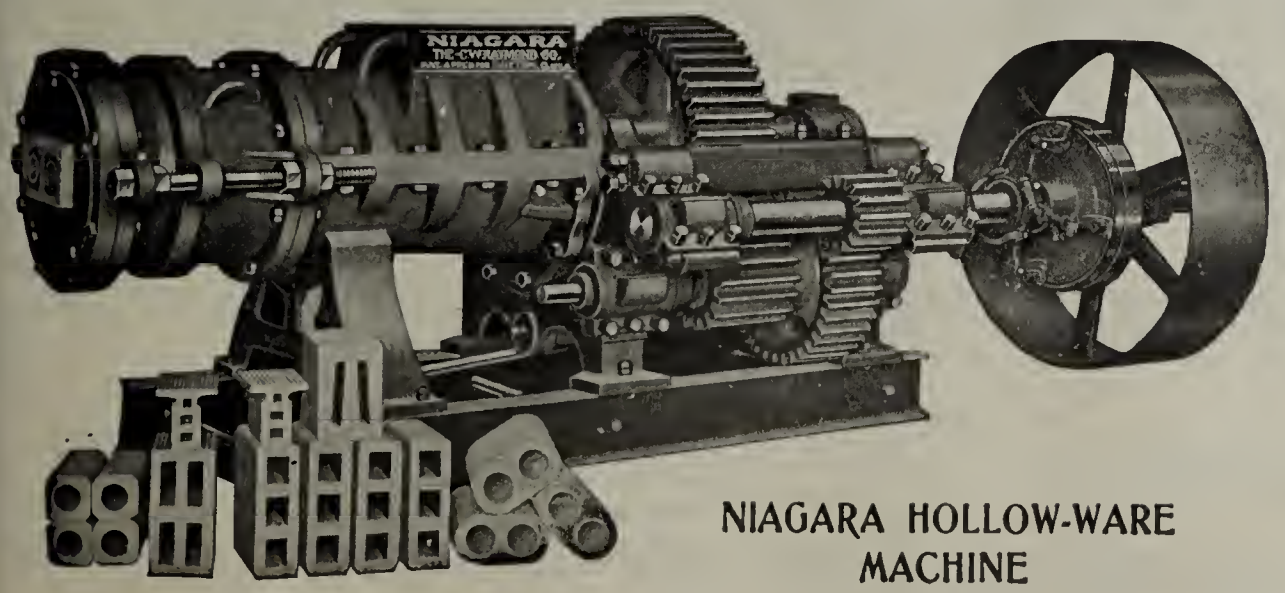
Clay-Working Machinery

DAYTON, OHIO, U. S. A.

NEW YORK
39—41 Cortlandt Street
ST. LOUIS
315 Frisco Building
PITTSBURG
1425 Park Building



AUTOMATIC DOWN-CUT CUTTER

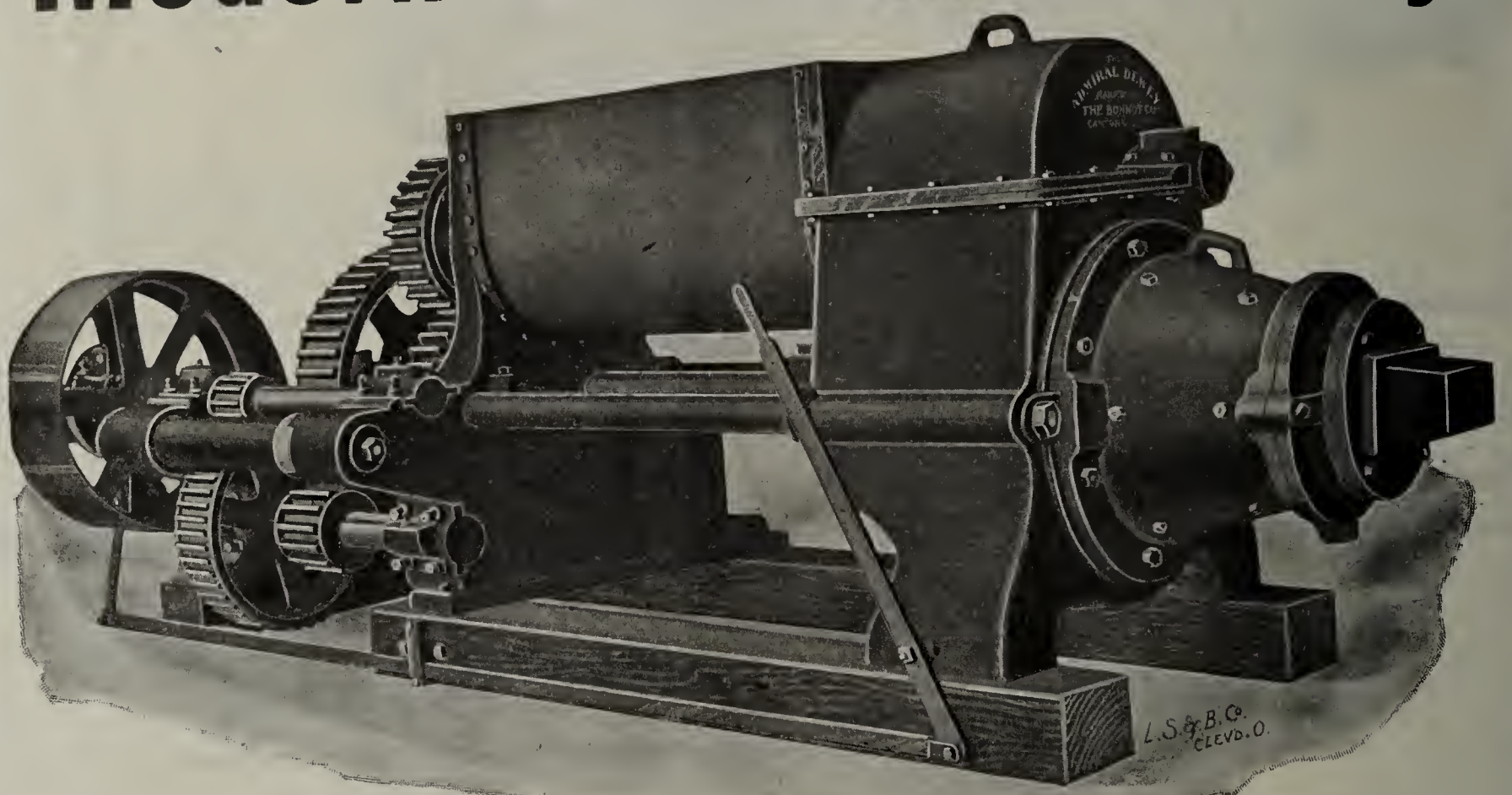


NIAGARA HOLLOW-WARE MACHINE

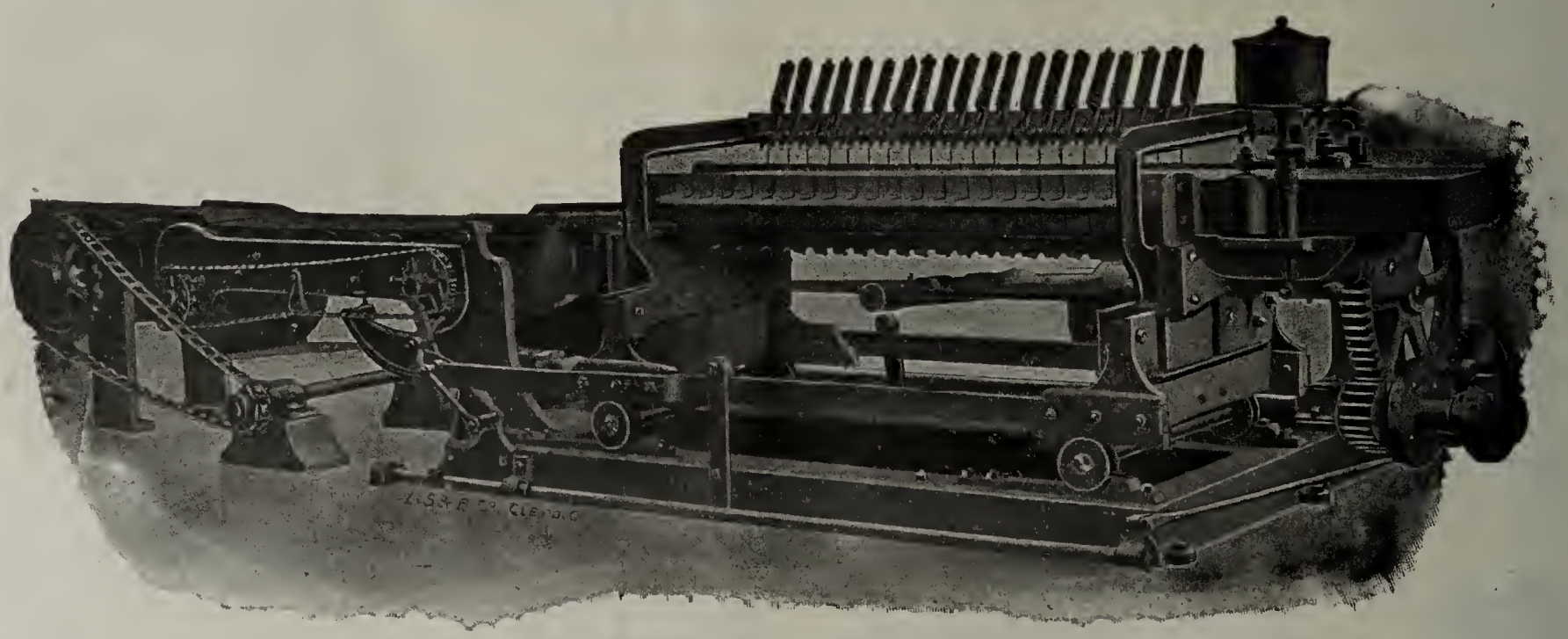
Raymond Machinery
Creates New
Business for the User
Better Brick
and more of them.

CATALOGUE

Modern Brick Machinery



SPECIAL COMBINED BRICK MACHINE AND PUG MILL 100,000 daily capacity.
AUGER BRICK MACHINES 10,000 to 100,000 capacity, five sizes.



AUTOMATIC SIDE CUT TABLE. Simple, positive, durable.

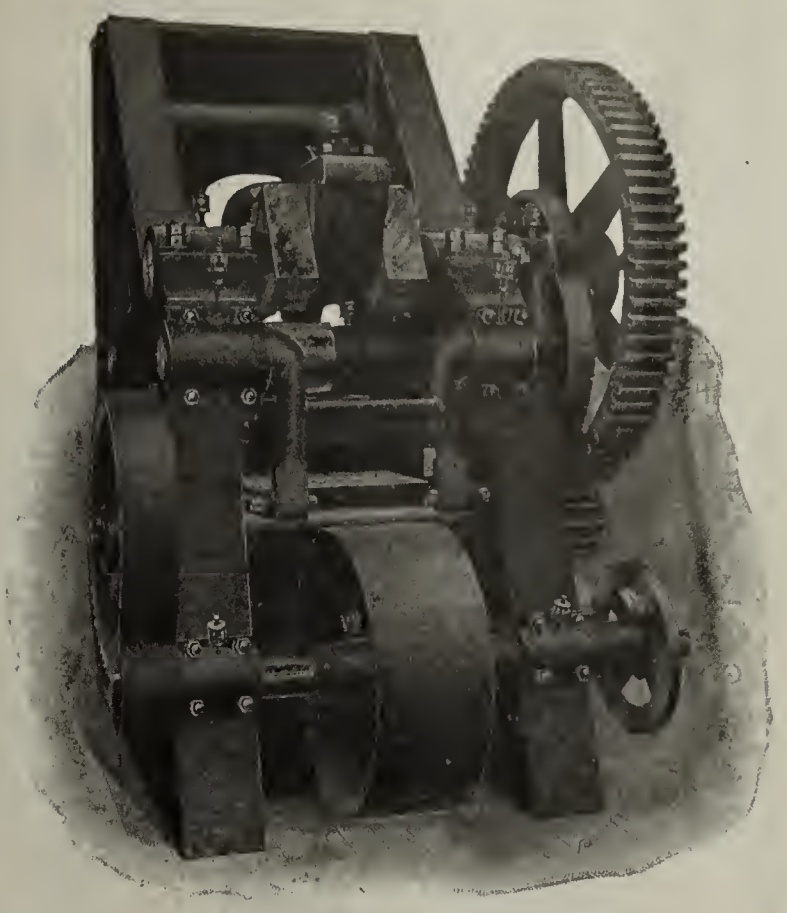
COMPLETE EQUIPMENTS FOR BRICKMAKERS. *ASK FOR CATALOGUE*

THE BONNOT COMPANY, Canton, Ohio.

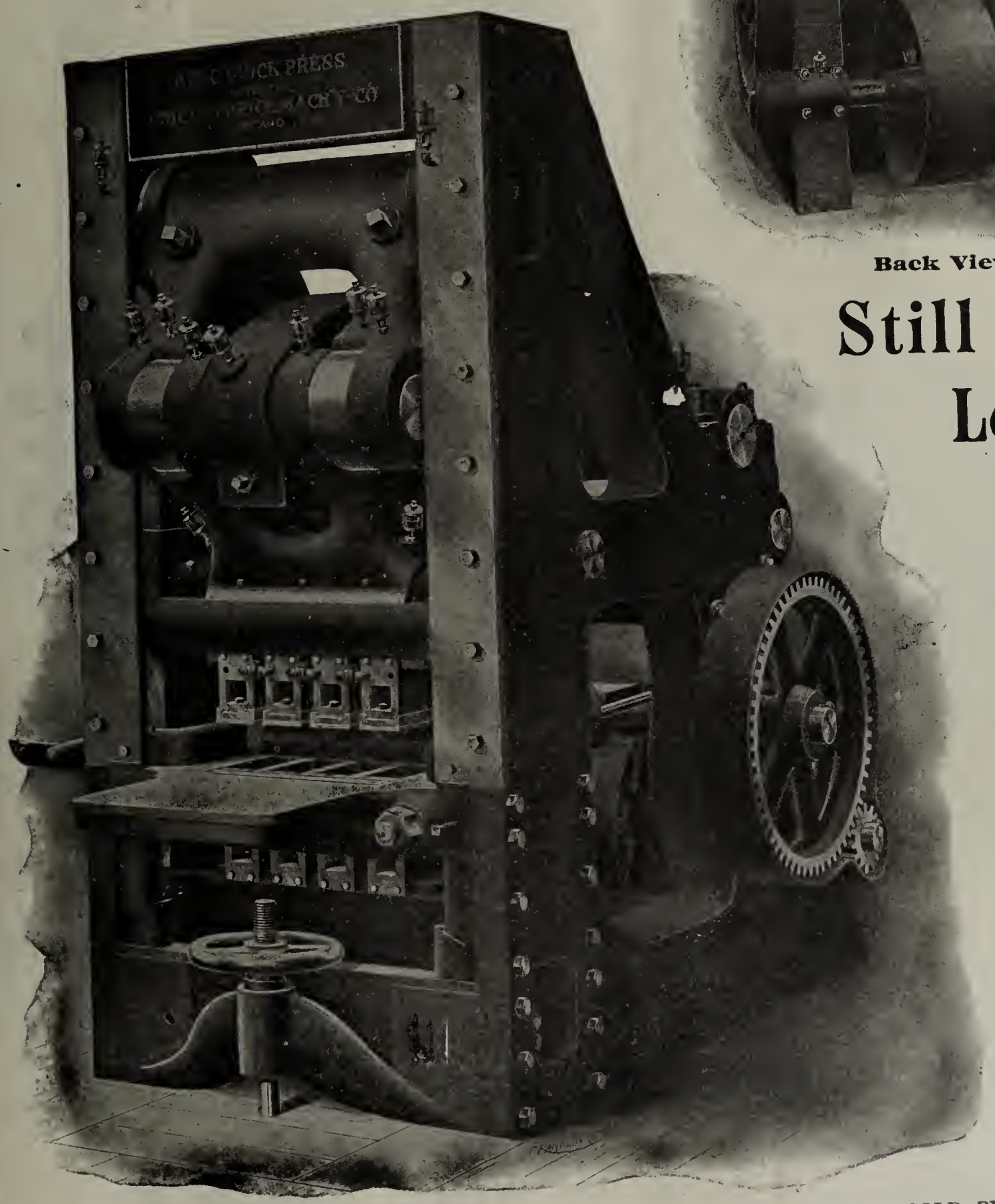
—WESTERN AGENTS—

CHICAGO BRICK MACHINERY CO., - - 77 Jackson Boulevard, Chicago, Ill.

NEW MODEL BERG BRICK PRESS



Back View.



Still in the Lead

AND

One Step Further Forward

Even stronger than ever and all self-contained. Greater pressure and fewer working parts than any other machine. Simple, massive, compact. Running mechanism placed in rear, as shown in upper cut, enabling this machine to be SHIPPED IN ONE PIECE.

MANUFACTURED BY

ANDERSON FOUNDRY & MACHINE WORKS

Anderson, Indiana.

SOLD BY

CHICAGO BRICK MACHINERY COMPANY

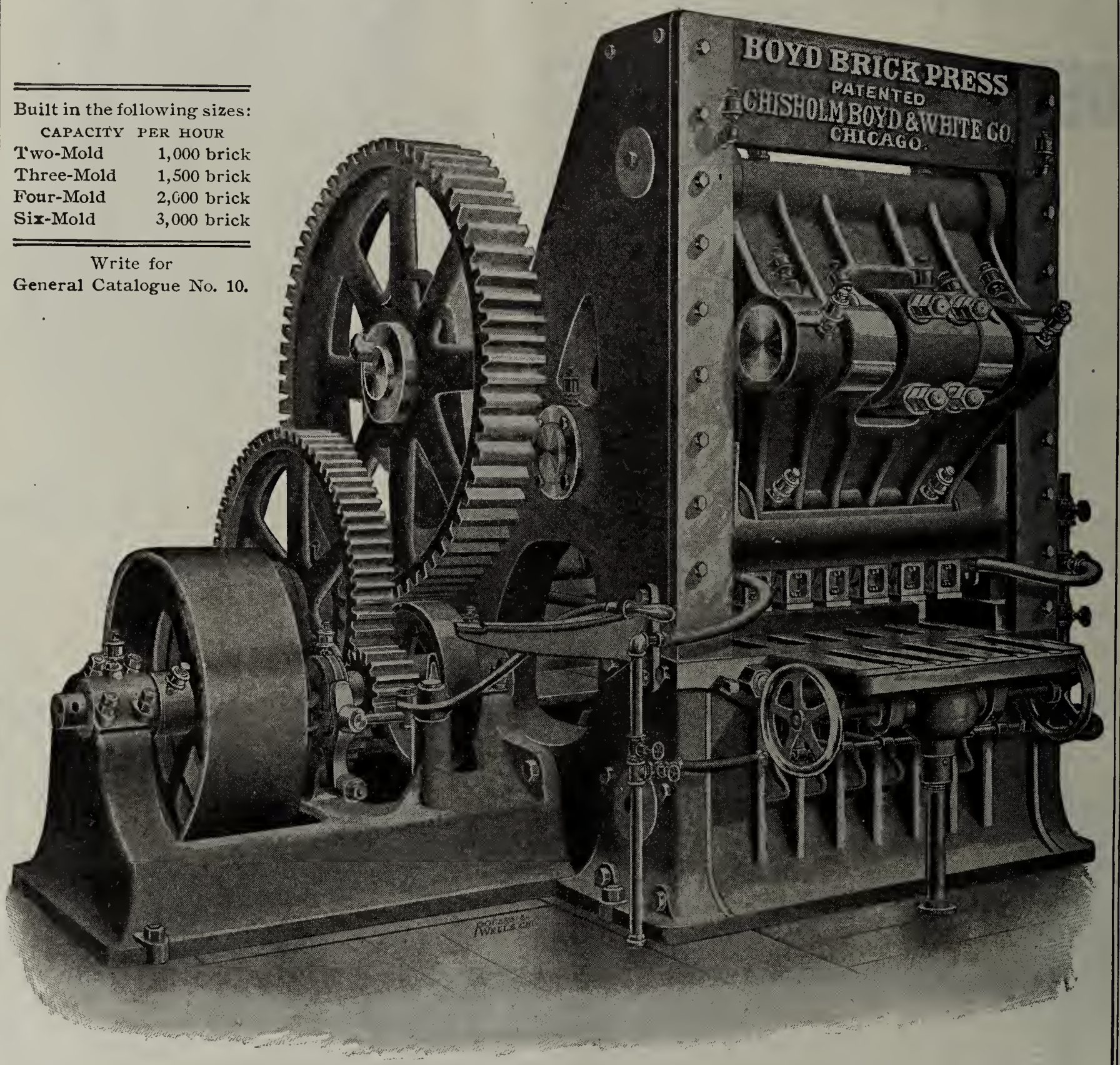
77 Jackson Boulevard, Chicago.

The Boyd Brick Press

Built in the following sizes:

CAPACITY PER HOUR	
Two-Mold	1,000 brick
Three-Mold	1,500 brick
Four-Mold	2,000 brick
Six-Mold	3,000 brick

Write for
General Catalogue No. 10.



Another Record for the Boyd Press:

Six of our SIX-MOLD PRESSES in use on ONE YARD since 1892. Average cost of repairs for each machine One Dollar per year.

THE BOYD PRESS has always been distinguished for originality in design and construction. It will make better brick from clay or shale than can be made from the same material by any other press. It is selected and purchased by the most progressive Brick Makers. The largest and most successful brick plants in the country are using Boyd Presses.

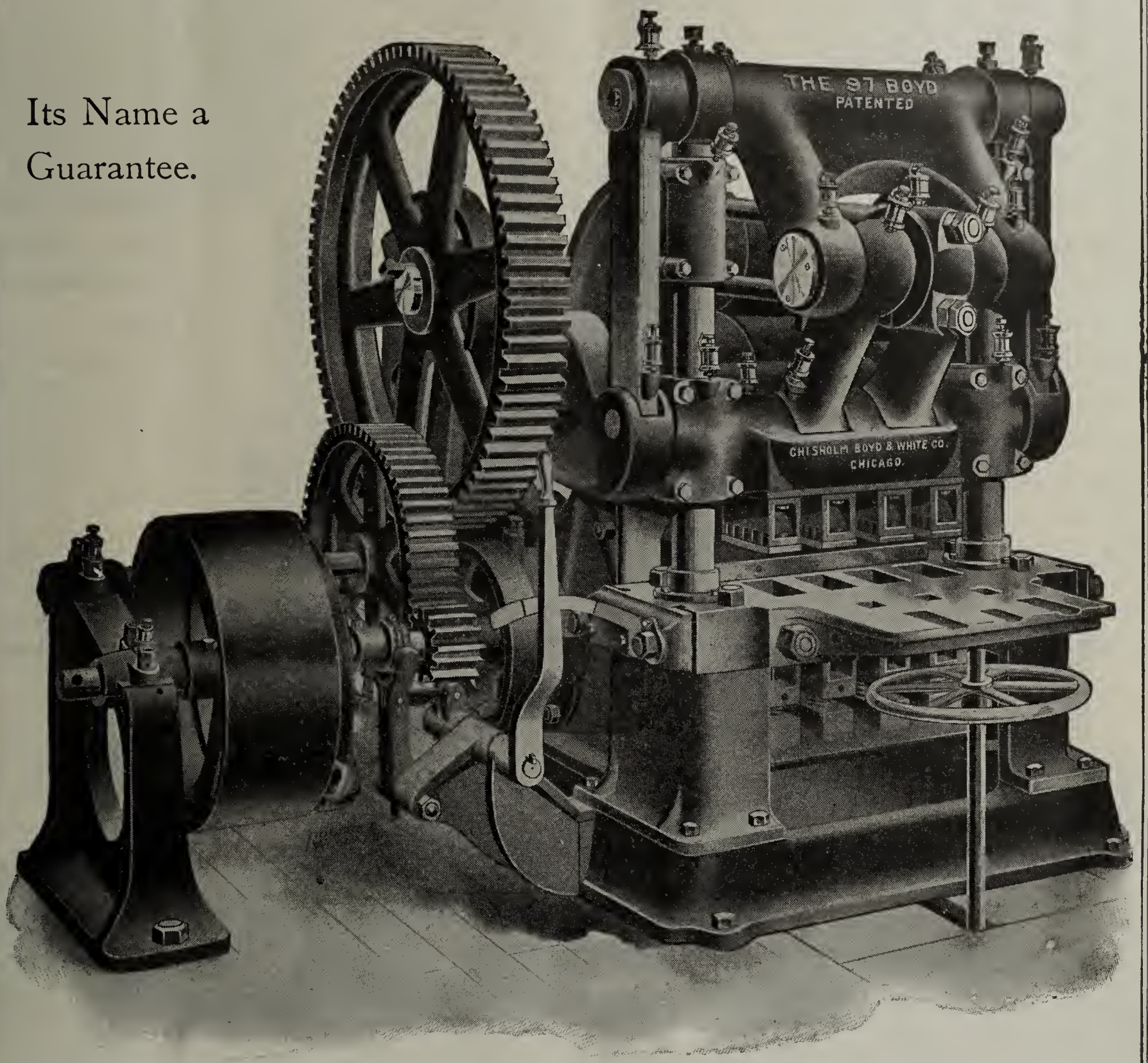
Chisholm, Boyd & White Company

Office and Works, 57th and Wallace Sts. **CHICAGO, ILL.**

The Boyd Brick Press

The '97 Model

Its Name a Guarantee.



THE '97 MODEL BOYD BRICK PRESS has enormous strength and great durability; it is compact; the adjustments are convenient; it operates quietly and smoothly; the workmanship and material are of the best; the design ingenious, and shows the most perfect application of scientific and mechanical principles to the art of brickmaking.

THE BOYD is the only Brick Press provided with an independent adjusting device for regulating the amount of clay in the molds and the pressure on the brick. This feature positively ensures equal pressure and finish on both sides of the brick, and no granulated or soft centers.

Sent on trial and fully guaranteed. Seventy presses of this pattern now in use. Cannot be broken in pressing brick. Write for descriptive catalogue No. 9.

Chisholm, Boyd & White Company

Office and Works, 57th and Wallace Sts. **CHICAGO, ILL.**

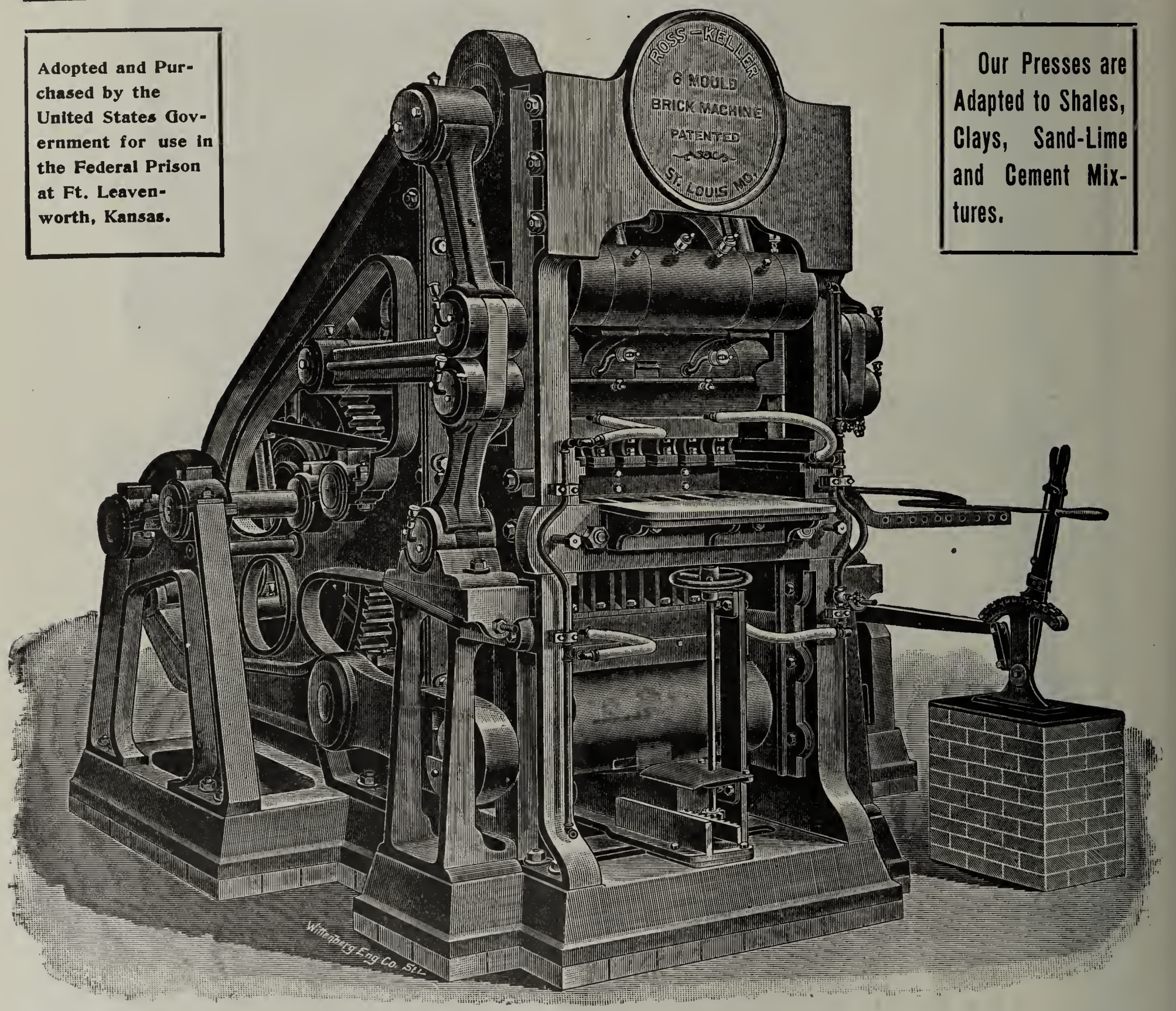
DO YOU KNOW

That we are building the best Sand-Lime Brick Plants being erected in this country to-day?

Have just completed and turned over to the purchasers a double Sand-Lime Plant, and made our guarantee good on the trial run. Machinery satisfactory. Product perfect. Everybody happy.

Let us tell you about our machinery, including our celebrated Ross-Keller Triple Pressure Brick Press, which has no equal for strength and efficiency.

Adopted and Purchased by the United States Government for use in the Federal Prison at Ft. Leavenworth, Kansas.



Our Presses are Adapted to Shales, Clays, Sand-Lime and Cement Mixtures.

For prices and particulars address

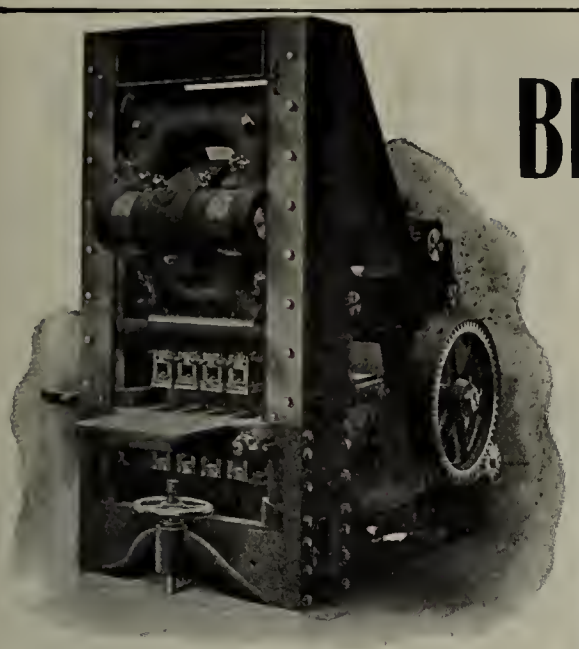
Ross-Keller Triple Pressure Brick Machine Co.

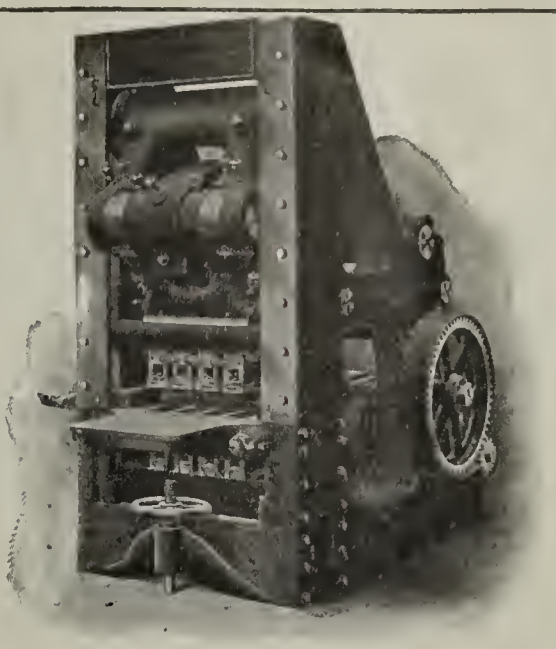
GEO. M. McDOWELL, Sales Agent
for Pacific Coast, Portland, Ore.

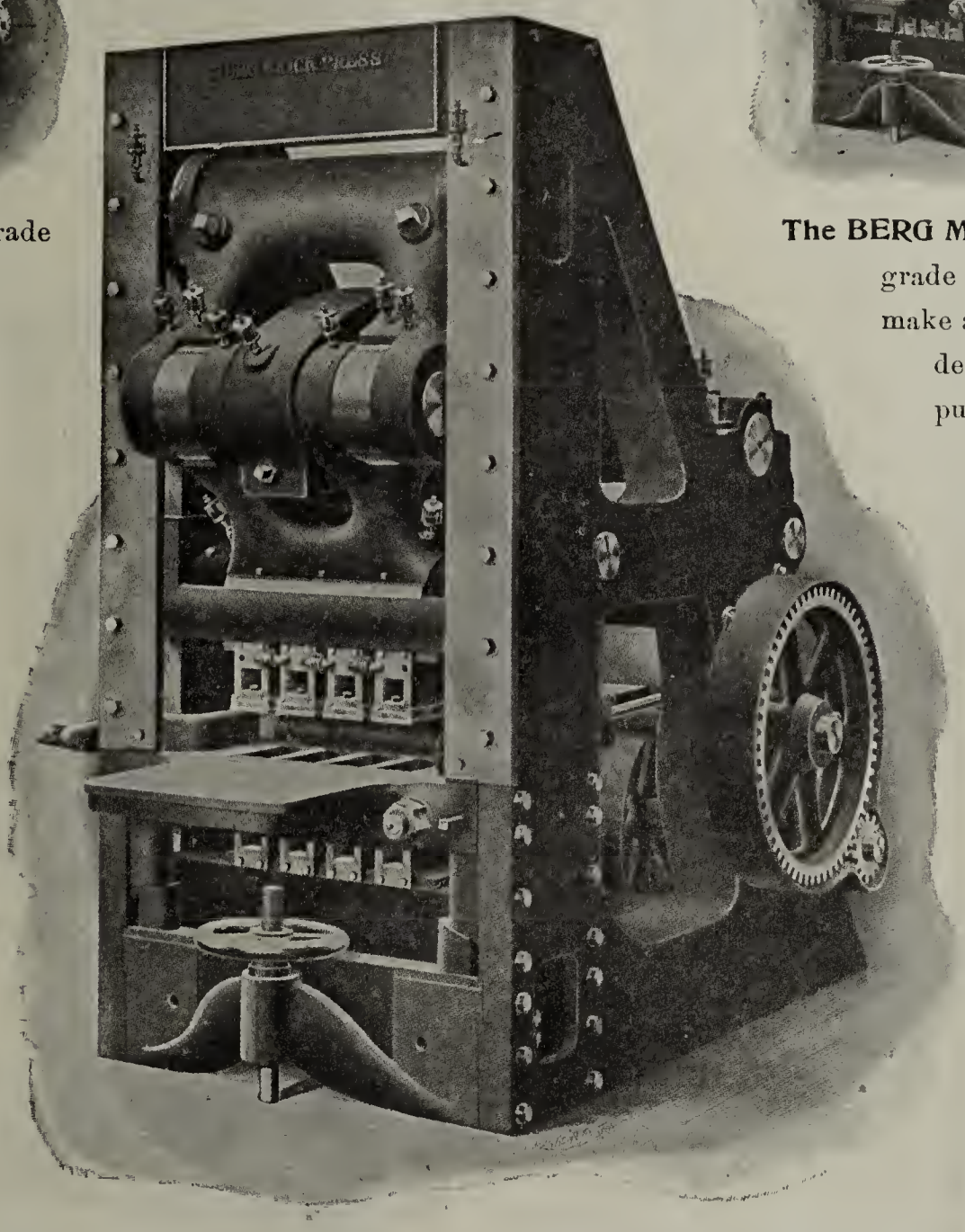
FULLERTON BUILDING, ST. LOUIS, MO., U. S. A.

BERG BRICK PRESS

The highest development of the Art of Brickmaking Machinery so pronounced by the United States Government.







The BERG for the highest grade of pressed brick of shale or clay. It makes all kinds of shapes and sizes of brick. Changes from one shape to another can be made in less than an hour's time.

The BERG MAKES the highest grade of fire brick. Can make all kinds of shapes desired for fire-brick purposes.

First-Class Workmanship. Cut Gearing. Fully Warranted.

Three distinct pressures make the brick evenly pressed all through. No granulated centers of the brick.

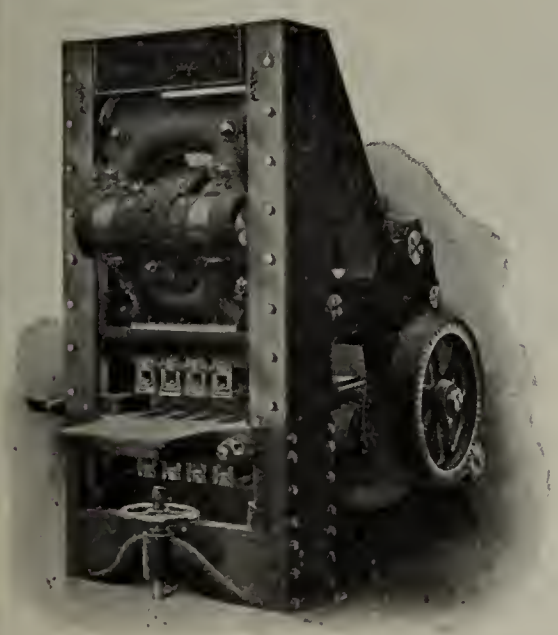
The BERG makes the best sand-lime brick and cheapest because it is the strongest machine and gives the highest pressure. Thirty-five sand-lime plants in United States use the **BERG** Brick Press SUCCESSFULLY.

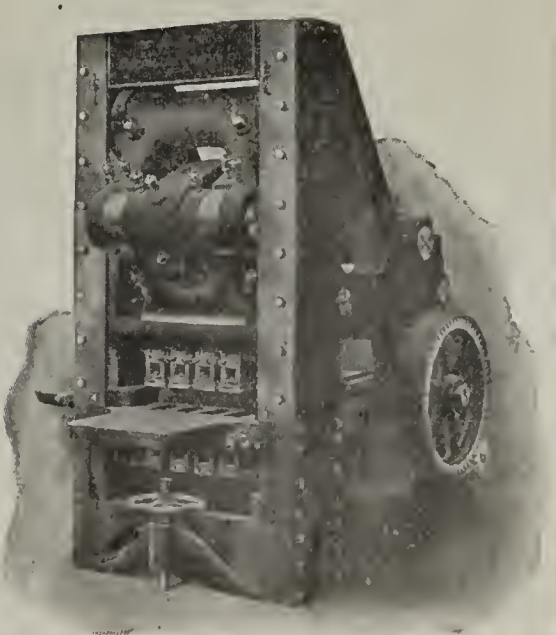
The BERG is the best for sand and cement because of its strong pressure. Uses less cement, makes cheaper brick.

The 1905 Berg Press

Many other steps further forward in improvement and highest grade of material and workmanship, also cut gearing. Fully guaranteed as to its success. Manufactured by its inventor in Toronto, Canada, at the Bertram Engine Works Co. Plans and specifications on the different kinds of plants furnished, also all equipments.

For prices and full particulars, address





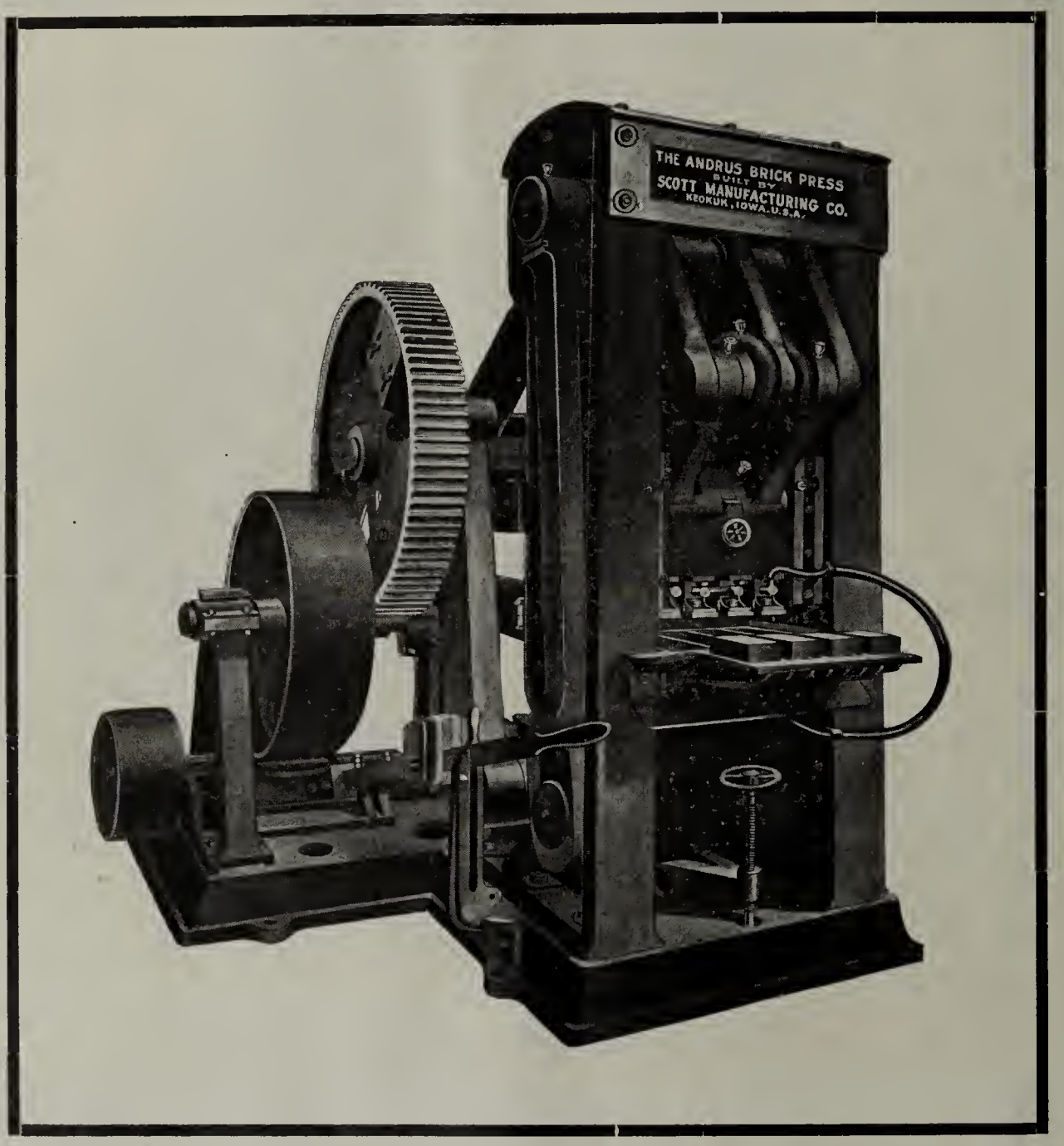
A. BERG

THE BERTRAM ENGINE WORKS

Toronto, Ontario, Canada

ONE GLANCE OUGHT TO CONVINCE YOU

"THE PRESS THAT SCOTT BUILDS"



"Makes brick every day" because it never takes time to lay up for repairs

SCOTT MANUFACTURING COMPANY

ST. LOUIS, MO.

WORKS:
Keokuk, Iowa.

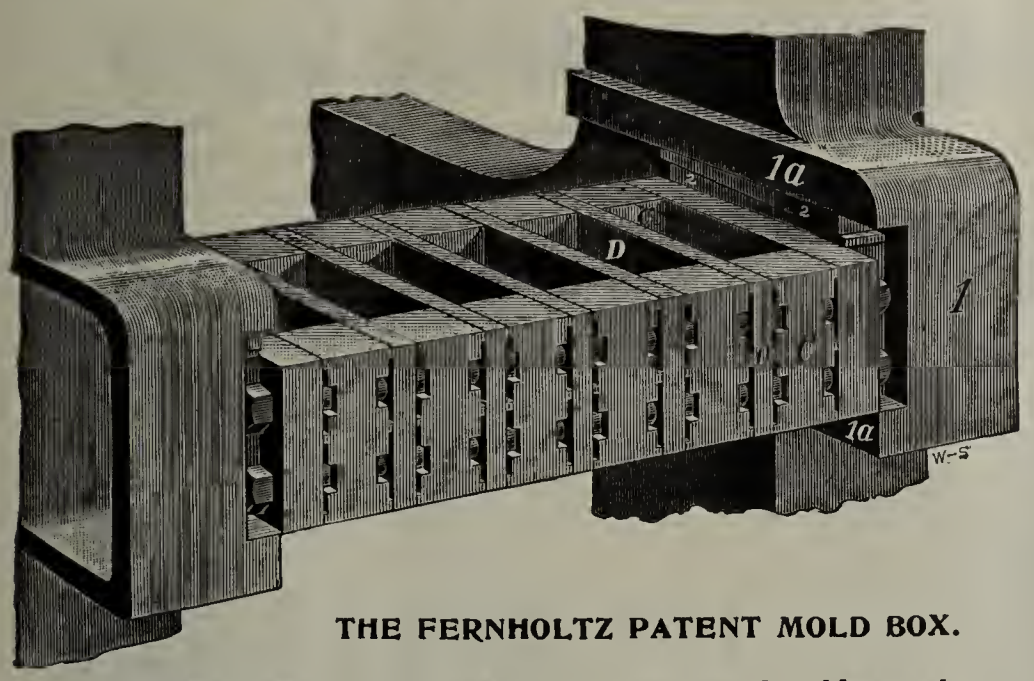
Call and see us at 609-610 Commonwealth Trust Building.

The Fernholtz Brick Machinery Co.

Manufacturers of

The Celebrated Fernholtz Dry Press

Four mold Press 20,000 daily capacity. Six mold Press 30,000 daily capacity

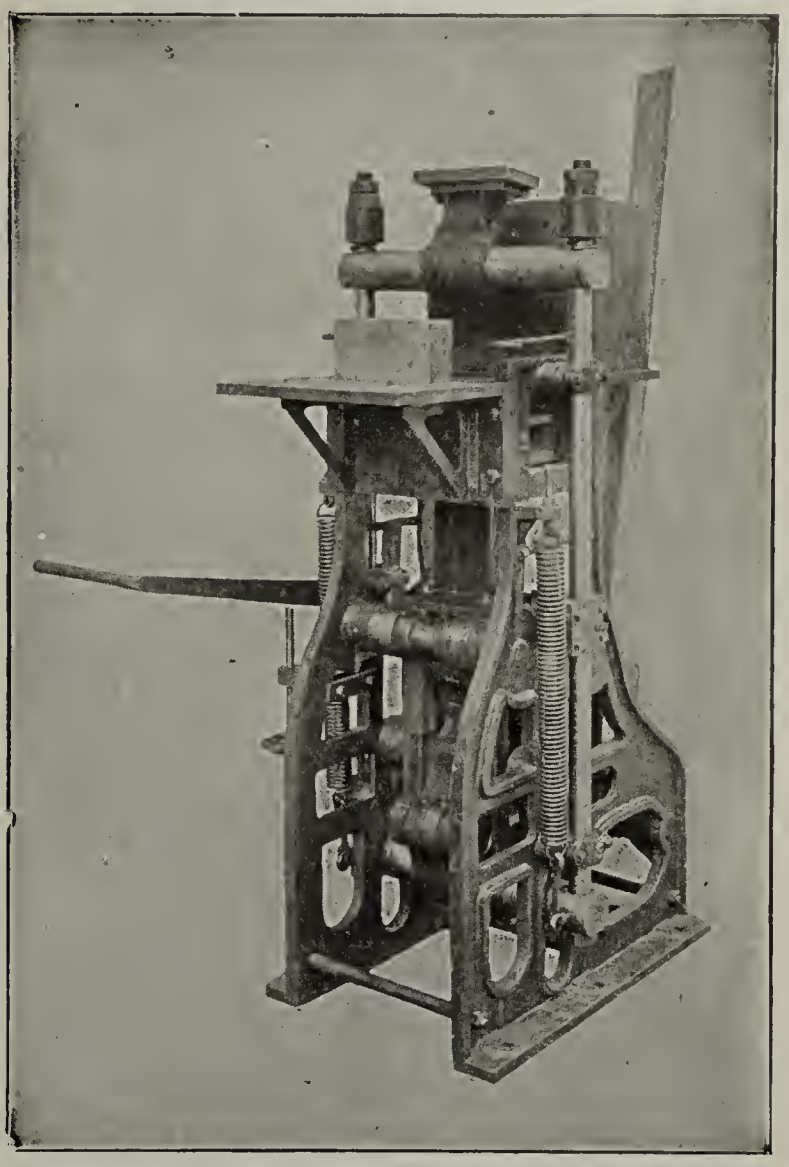


THE FERNHOLTZ PATENT MOLD BOX.

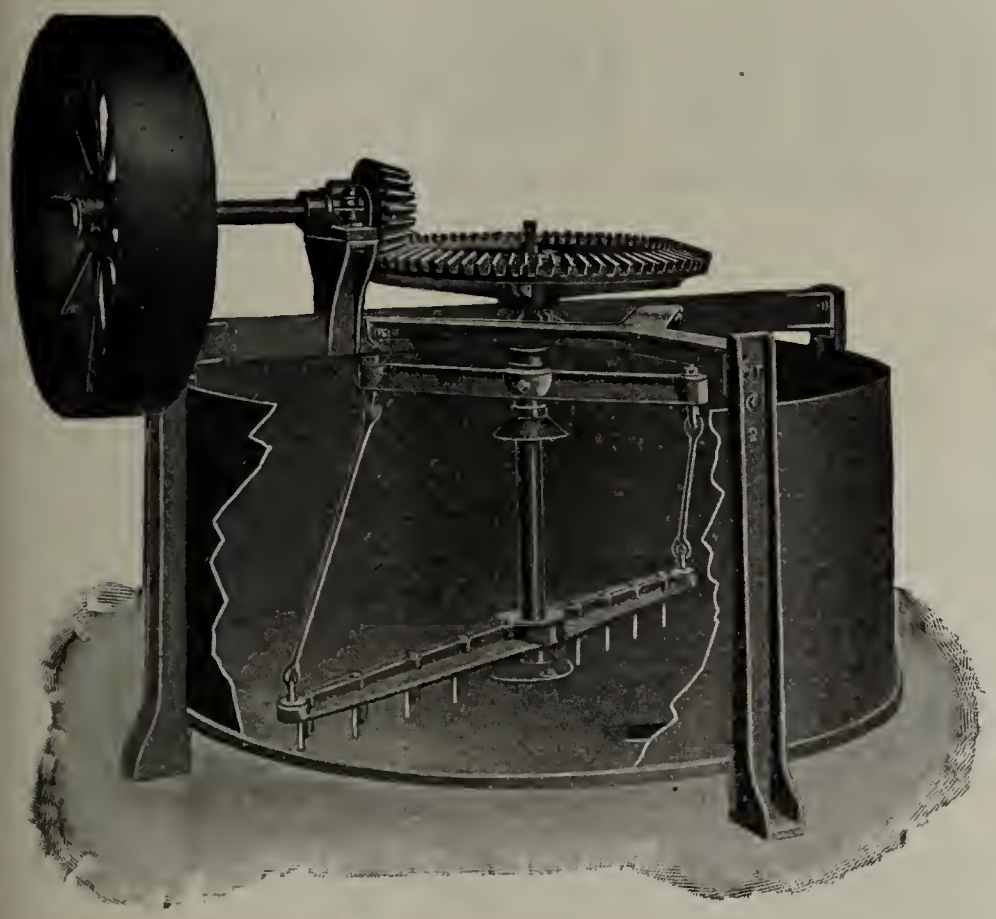
No old style Liners. The Blocks are adjustable and molds are always one size. We have put them in most all makes of Dry Press machines. Easily and quickly adjusted. They are made entirely out of chilled iron, the hardest known metal.

GRATH PATENT HAND POWER PRESS.

Especially adapted for ornamental designs. Any size brick up to 12⅝ inches long, 10 inches wide and 4¼ inches thick.
Brick set into kiln direct from press.



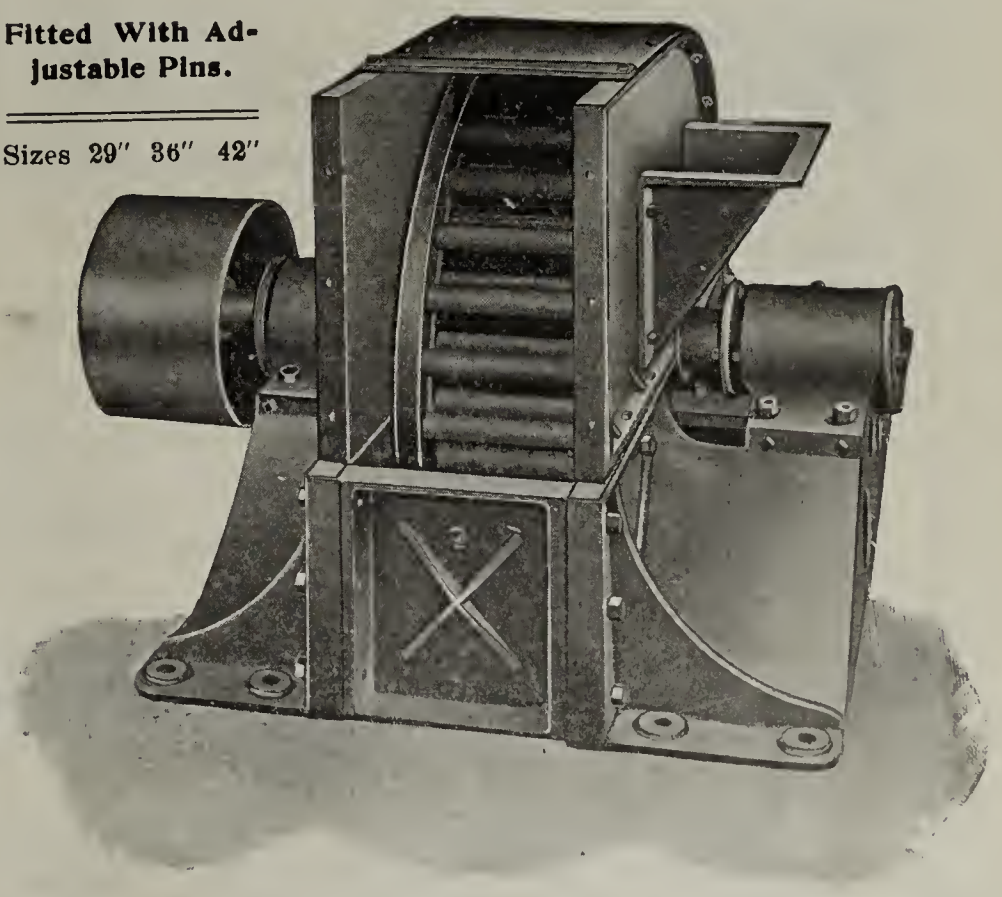
GRATH PATENT HAND POWER PRESS.



A GOOD MIXER IS ALWAYS APPRECIATED.

Fitted With Adjustable Pins.

Sizes 29″ 36″ 42″

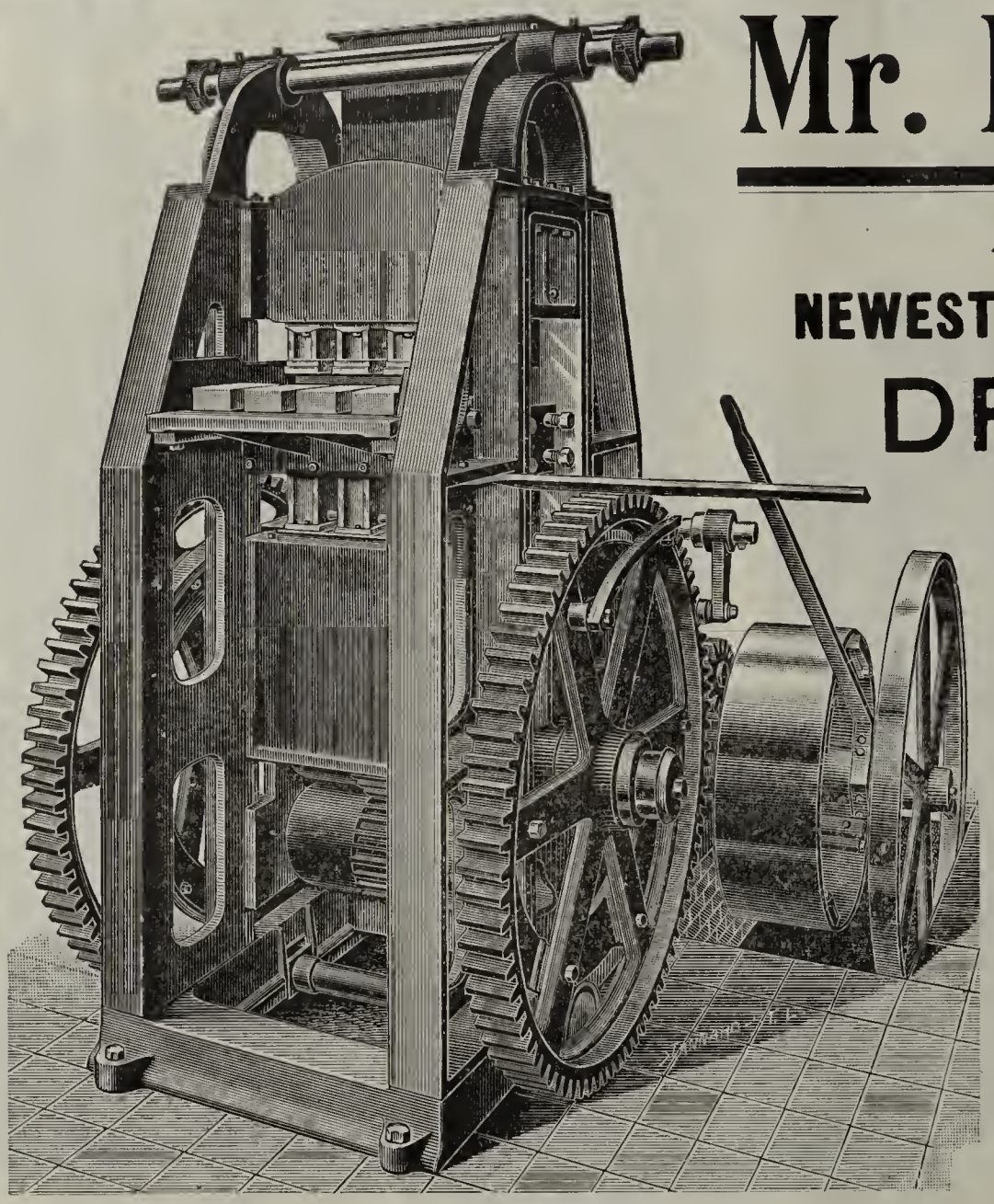


THE FERNHOLTZ CLAY PULVERIZER.

The Fernholtz Brick Machinery Co.

Cable Address "Fernbrick." Western Union Code.

Boyle Avenue and Old Manchester Road, ST. LOUIS, MO., U. S. A.



Mr. Brickmaker

Are you looking for the

NEWEST, BEST AND CHEAPEST IN

DRY-PRESS BRICK MACHINES?

If so, you cannot afford to overlook the strong points of excellence and the remarkable **simp icity, strengıh** and **effıciency** fonnd in

THE RELIANCE

"The Machine with a Future"

Radical departure from old principles.

Unique in construction, sound in principle, unrivaled in attainment!

Makes not only Brick but Money

A FEW POINTS:

1. Weight and Floor Space about one-half that of any other Brick Machine.
2. Compression of Clay Perfect and Uniform. (Entirely new Principle).
3. Every Brick is a Face Brick. There are No Granulations.
4. Adjustment permits any pressure desired (A Feature peculiar to the **RELIANCE.**)
5. Cheapest because having fewest parts. (Also cheapest to keep in repair).

EMINENTLY PRACTICAL AND ECONOMICAL

WRITE TO-DAY FOR PARTICULARS. SEND CLAY FOR SAMPLE BRICKS.

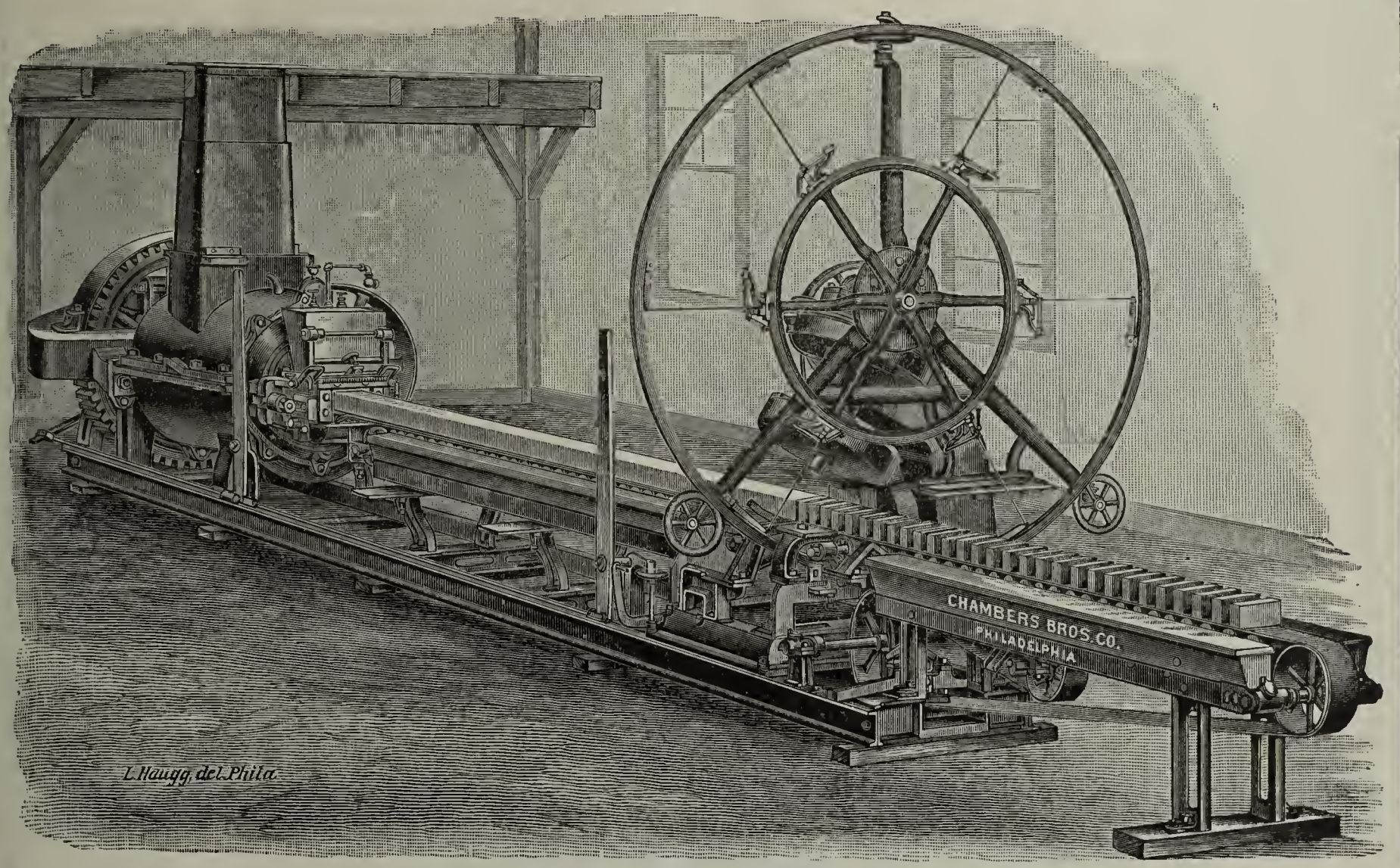
Made By the

RELIANCE MACHINE AND TOOL WORKS

ST. LOUIS, MO.

MACHINERY FOR BUILDING BRICK
AND FOR STREET PAVERS

ROUND CORNER PAVING BRICK WITHOUT REPRESSING



THE CHAMBERS AUTOMATIC SIDE-CUT BRICK MACHINE.

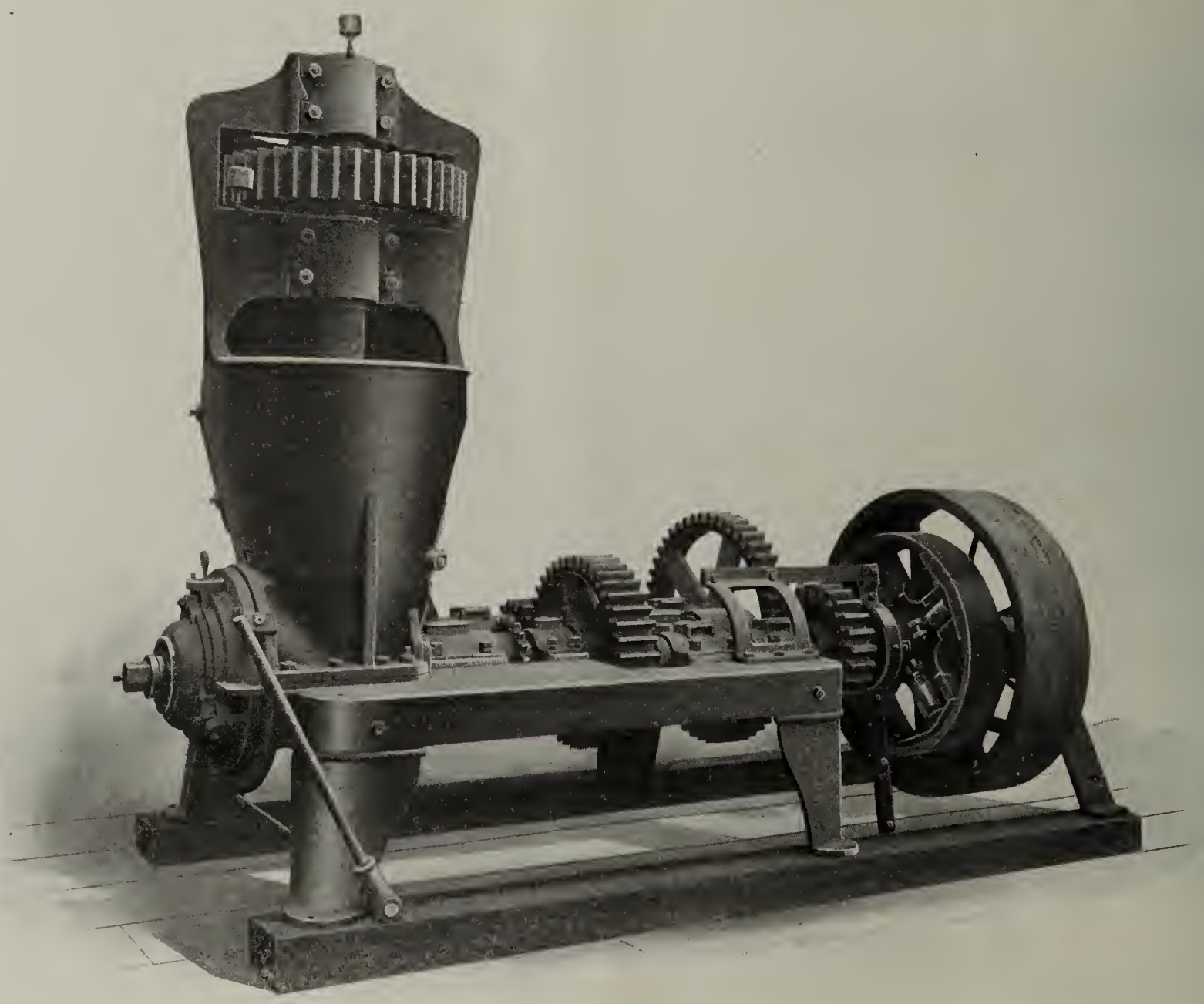
Automatic End Cut Brick Machines of five sizes, having capacity from 10,000 to over 100,000 brick daily under favorable conditions.

CHAMBERS BROTHERS COMPANY
52D AND MEDIA STREETS
PHILADELPHIA, PA.

E. R. FRAZIER, Chicago Agent,
59 West Jackson Boulevard.

The Brewer No. 10A

A thoroughly modern machine in every respect, built particularly for those plants where drain tile, brick and hollow block are made.



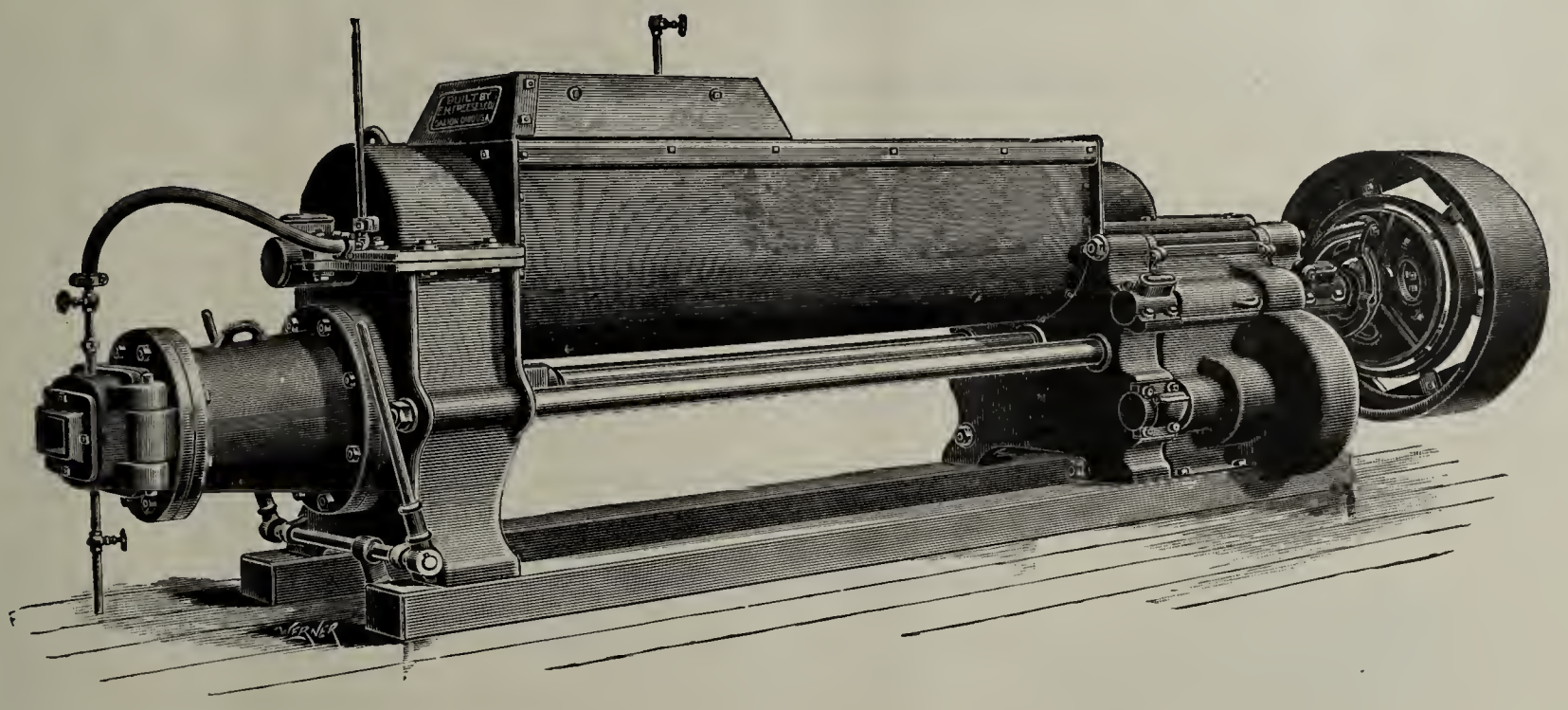
We have redesigned our No. 10 machine, incorporating in the new No. 10A model every feature of strength, efficiency, durability and capacity which is known to the modern practice of machinery building. There is certainly nothing else in the nature of a brick, tile and block machine which can compare with it from any point of view.

Here are some features of the new machine worthy of notice: Upright cylinder and bridgetrees both cast together in one piece. No bearings in the clay. Marine pattern up-thrust. Forged steel knives. White iron augurs. New 4-arm pattern high-grade friction clutch.

Further detailed information upon request.

H. BREWER & CO., TECUMSEH, MICHIGAN.

UNION BRICK MACHINES



We build these Machines in five sizes. Capacities to 10,000 brick per hour.

Several hundred are in everyday use. They do first-class work and are convenient, economical and durable. This can be verified by investigation.

We also build Brick Machines with separate Pug Mill.

Don't forget our Automatic Cutters. **They give satisfaction.**

State your requirements and let us furnish particulars.

E. M. FREESE & CO.

GALION - - - - OHIO

LAMINATION is the source of more loss, more worry and more anxiety than all other troubles of a brickmaker

KENTON C READ, Pres. ANDY O'CONNELL, Vice Pres. and Gen'l Mgr C. M. MILLER, Sec.-Treas.

THE

C. M. Miller Mfg. and Mining Co. Inc.

MAKERS OF

High Grade Veneer and Building Brick

Office, 331 Ohio Street.

New Phone 1142.

Terre Haute, Ind. Dec. 22. 1904.

Mr. H. L. Hix, Mgr.

The Wallace Mfg. Co., Frankfort, Ind.:

Dear Sir—I feel that I must tell you my experience with the brick made on the Intermediate Wonder:—

A few days ago a very prominent contractor asked me to bring him some samples of our brick. I fixed up some samples and started to his place, and just as soon as he saw them, he said: "I don't want them—they are no good; I would not lay one of that kind of brick," but I begged him to look at them and tell me why he did not want them. He asked me if he could break one of them, and I said, "Yes, break all of them." So he took his hammer and hit one on the corner; then he looked up at me and said: "I never saw a stiff mud brick like that;" then he broke it all up, just as nice as any brick, and he said: "That is the first stiff mud brick I ever saw without lamination," and that they were all right.

We are now selling our brick as fast as we can deliver them.

Pardon me for taking your time, and with SUCCESS to the WONDER, I am,

Yours very truly,

Andy Connell
V P and Gen Mgr

In the event that you want to make brick filled with LAMINATION, CRACKS and CROOKS, a Wonder Machine will not answer your purpose.

THE WALLACE MFG. CO.

FRANKFORT, IND., U. S. A.

Highest point of perfection achieved by the **WONDER.**

It works clays where other machines fail.

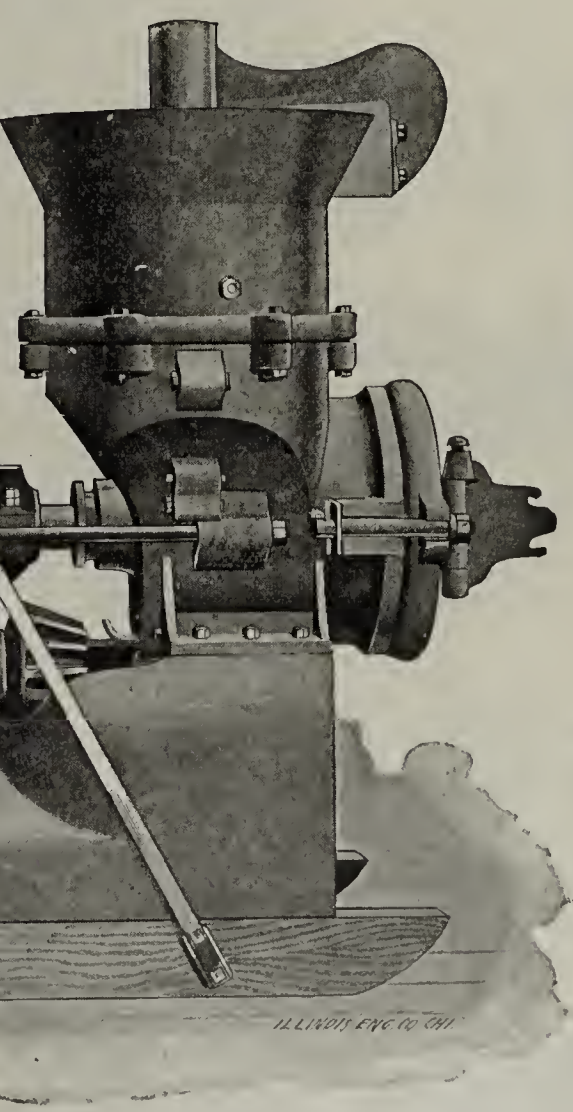
We are specialists in our line and difficult cases are sent to us for treatment.

Our experience has been large and varied, and may be of value to you.

Our service is yours for the asking.

Write us.

Our line is complete. We manufacture Brick Machines, Drain Tile Machines, Brick and Tile Cutting Tables, Automatic Cutters, Clay Preparing and Clay Reducing Machinery, and a full line of Brick and Tile Yard Supplies.



The Wallace Mfg. Co.

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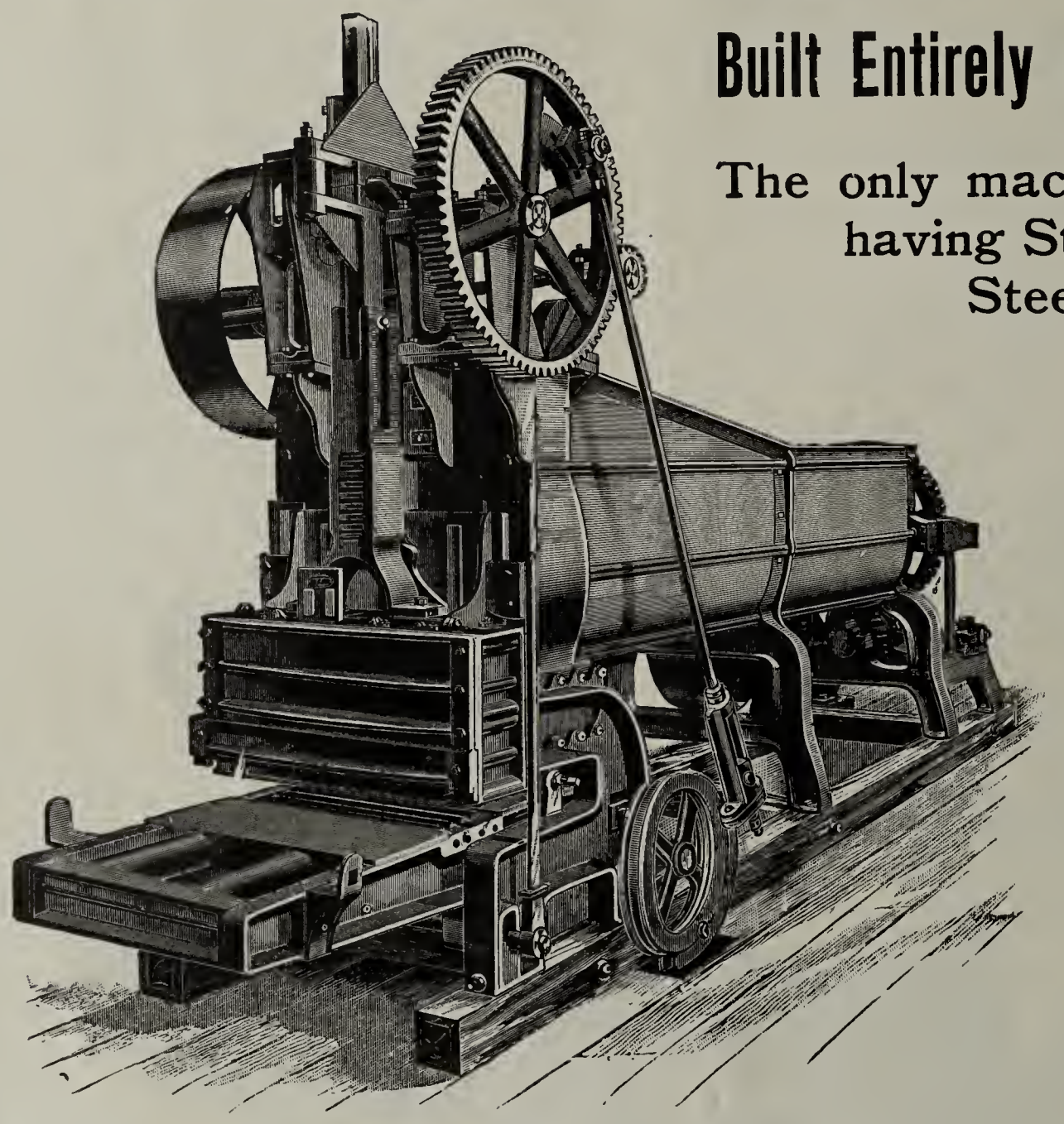
THE POTTS
HORIZONTAL BRICK MACHINE



Built Entirely of Iron and Steel.

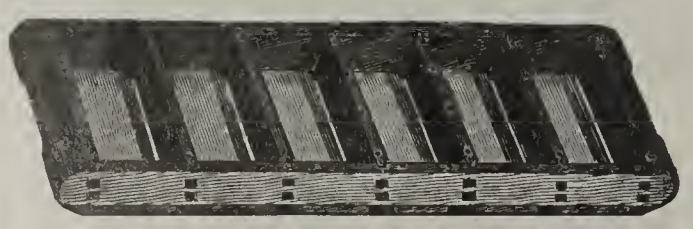
The only machine of this class having Steel Gear and Steel Shaft.

Built of the Best Material by the Best Workmen.

Simple, Strong and Durable.

No extra pug mill required to enable working the clay direct from the bank. Its great strength enables working the clay as stiff as practicable, insuring brick which will be STRAIGHT and SQUARE.

THE LEADER OF ALL SAND MOULD MACHINES.



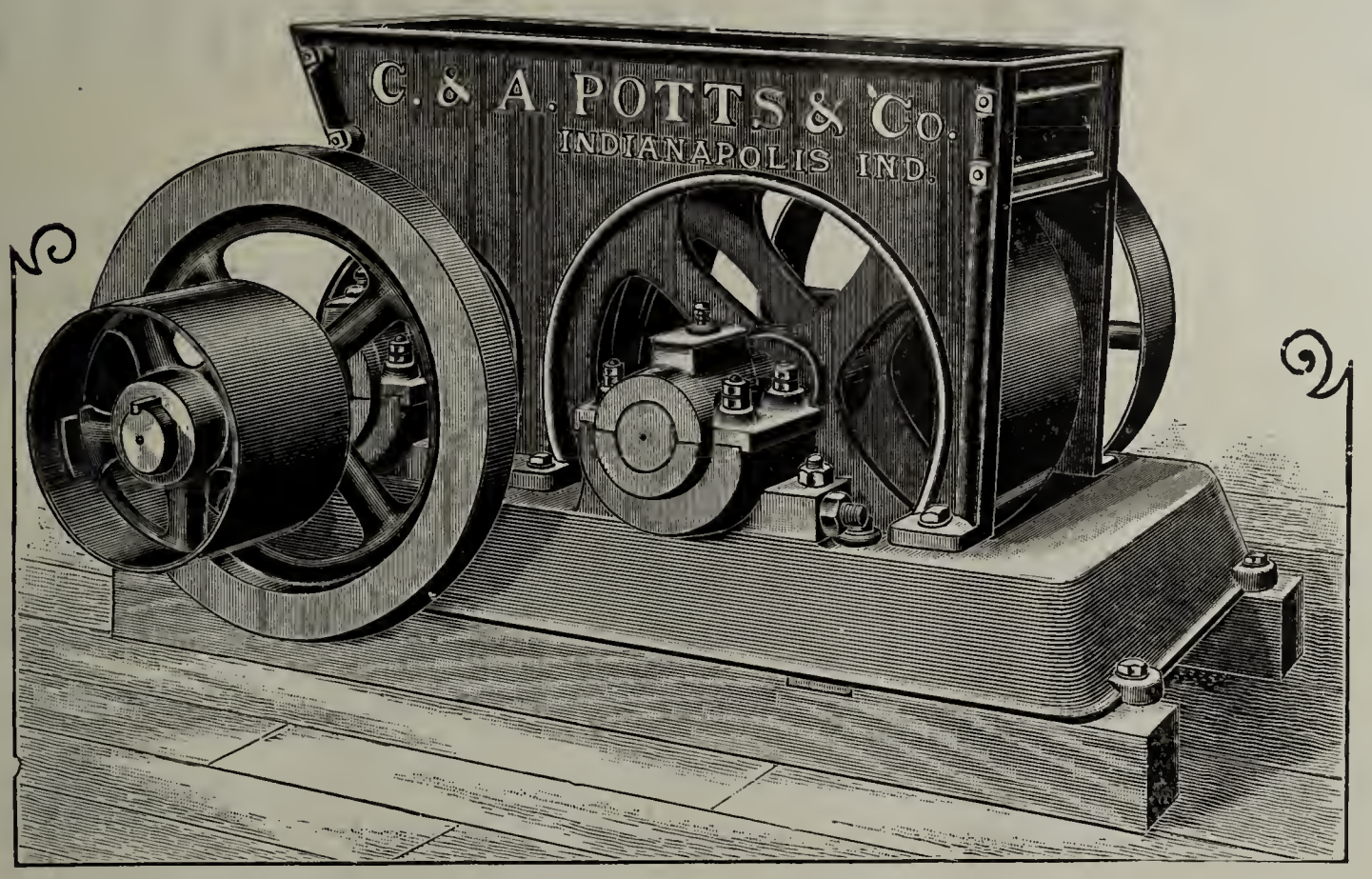
BRICK MOULDS A SPECIALTY

QUALITY IS OUR AIM.

We manufacture a complete line of Brick Yard Supplies. Write for prices.

C. & A. POTTS & CO., Indianapolis, Ind.

THE POTTS DISINTEGRATOR



Is not a spite machine, but is built the best possible. Having Heavy Chilled Rolls, Ring Oiling Bearings, Shafts of Steel and large in Diameter. The most successful machine for grinding out sticky clays and separating the stone.

THE POTTS MOULD SANDER

Simple in Construction,

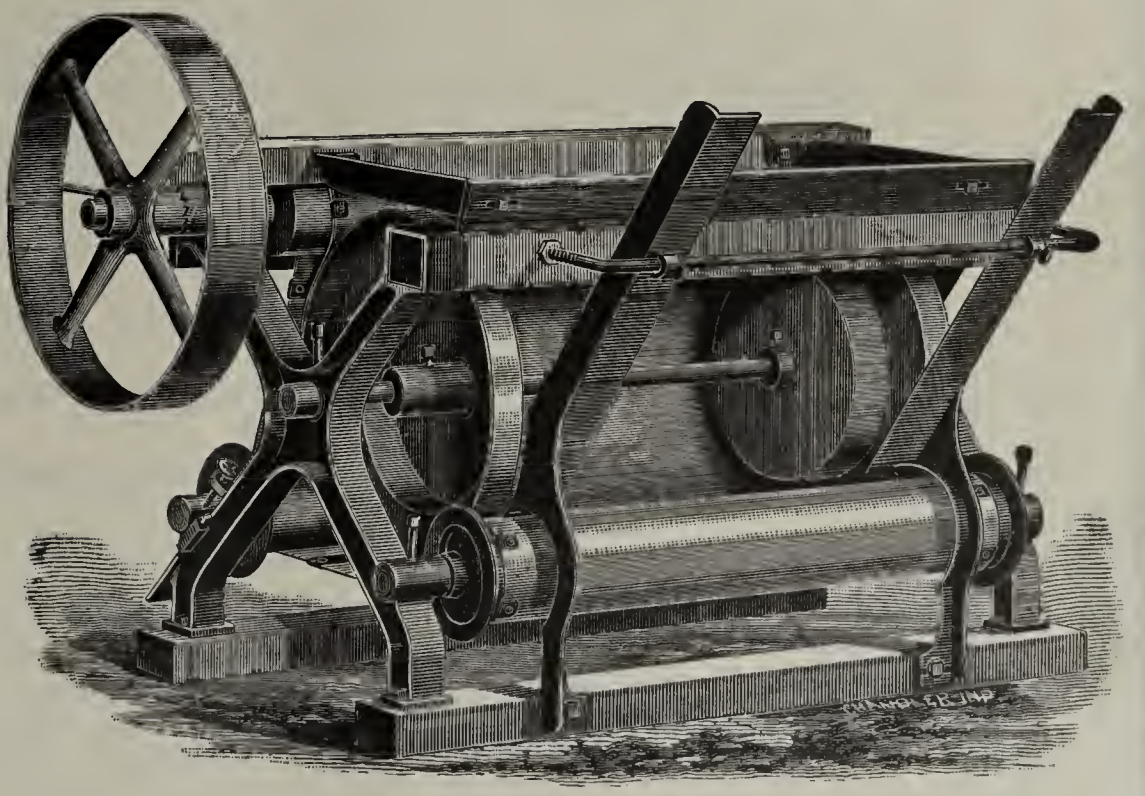
Strong and Durable,

Sands the Moulds Perfectly,

Never Strikes or gets Drunk,

Always Ready for Work,

No Brick Machine Complete without this Machine.



Patented February 5, 1889.

We make a specialty of equipping Sand Mould plants complete. We are the largest manufacturers of this class of machinery in the world. Write for prices.

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The "BUILT RIGHT

It is important if you have a dryer proposition to consult our dryer engineers. They are experts on Waste Heat Dryers, and will look over your yard and design you a dryer system to meet your needs. There are lots of points which bear on the successful operation of a Waste Heat Dryer. These should all be considered.

There is nothing like correctness of construction, and that is what we insure. If we take the commission of building you a perfect dryer you will get it. We first study your conditions and then design the best dryer to work under those conditions. **THEN WE BUILD THE WHOLE OUTFIT IN OUR OWN SHOPS.** We don't buy outside and divide the responsibility. When that dryer is done we are sure that it is "Built Right" and will "Run Right." Isn't it best to deal that way?

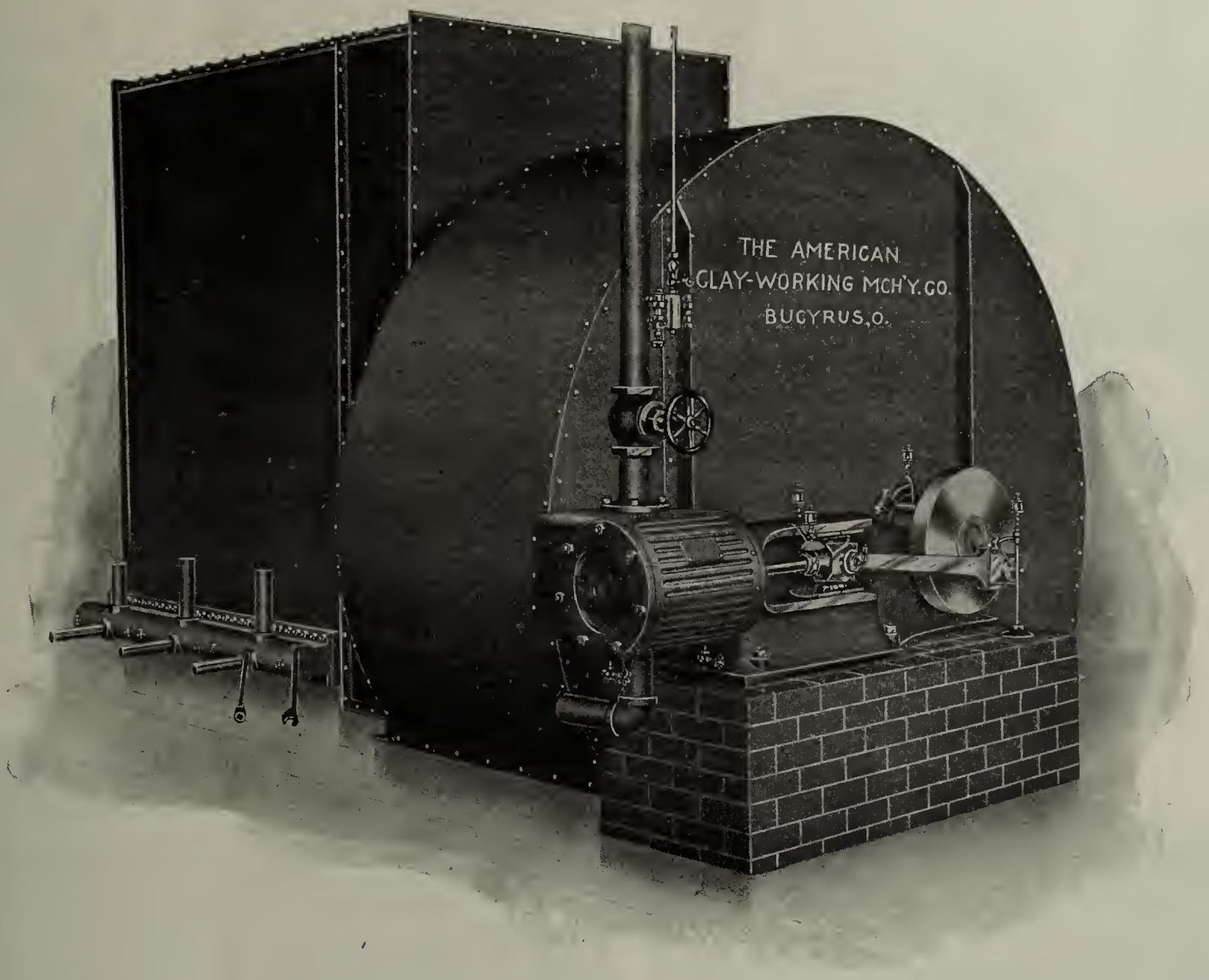
We are specialists on Waste Heat Dryers. We are pioneers in the business and have brought them to their present state of excellence. Our Waste Heat Dryer department has been given the most careful study, most tireless research, unflagging energy and unstinted cash to make it as near perfection as can be attained.

WE BUILD OUR OWN FANS. Every pound of metal that goes into them passes our own inspectors. Every bolt hole is punched under the eyes of our own men. Every rivet is pneumatically driven by our own workmen under our own superintendent.

In a word we KNOW WHAT OUR FANS ARE. We build them and we are positive that they are "Built Right and Run Right." You will find this trade-mark on every one of our fans, "Built Right Run Right" and it means exactly what it says.

Were we to buy our fans and other apparatus in the open market the fan makers would want a profit, and would strive to get the order, and to get it would cut the cost, and in the end you would have an inferior job in your plant. We can't afford to risk quality, because the permanent successful operation of the dryer rests largely upon it. If we make such a pronounced stand for quality, why shouldn't you? It means most of all to you. You pay for the dryer, and the success or failure of your plant depends upon it. We want to remove, so far as possible, all chance of your failure. That's why we build our own fans and other dryer apparatus so that we may be **sure** that our part of your plant is a success maker.

RUN RIGHT" Dryer.



We Build Our Own Dryer Apparatus and We Know Its Quality to be the Best.

THE AMERICAN CLAY MACHINERY CO.

BUCYRUS, OHIO, U. S. A.

We Manufacture Everything a Clayworker Needs.

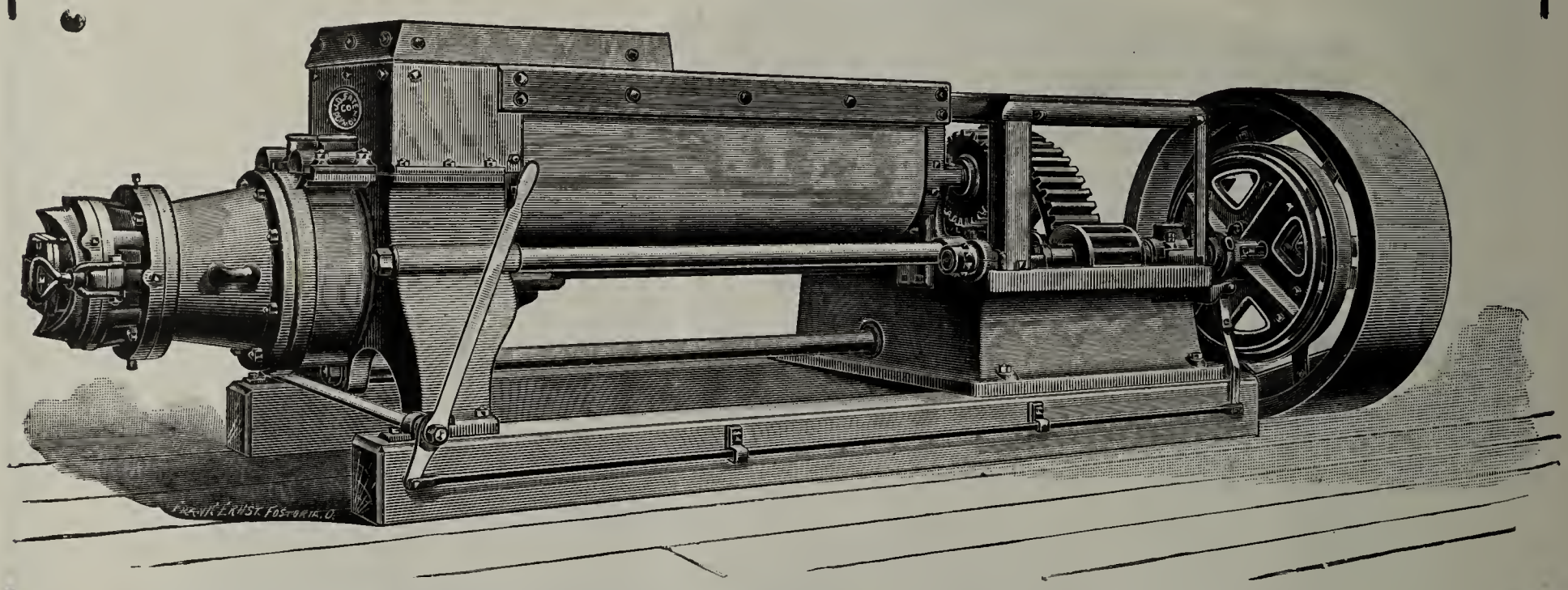
Write for Catalogue.

THE "PREMIER"

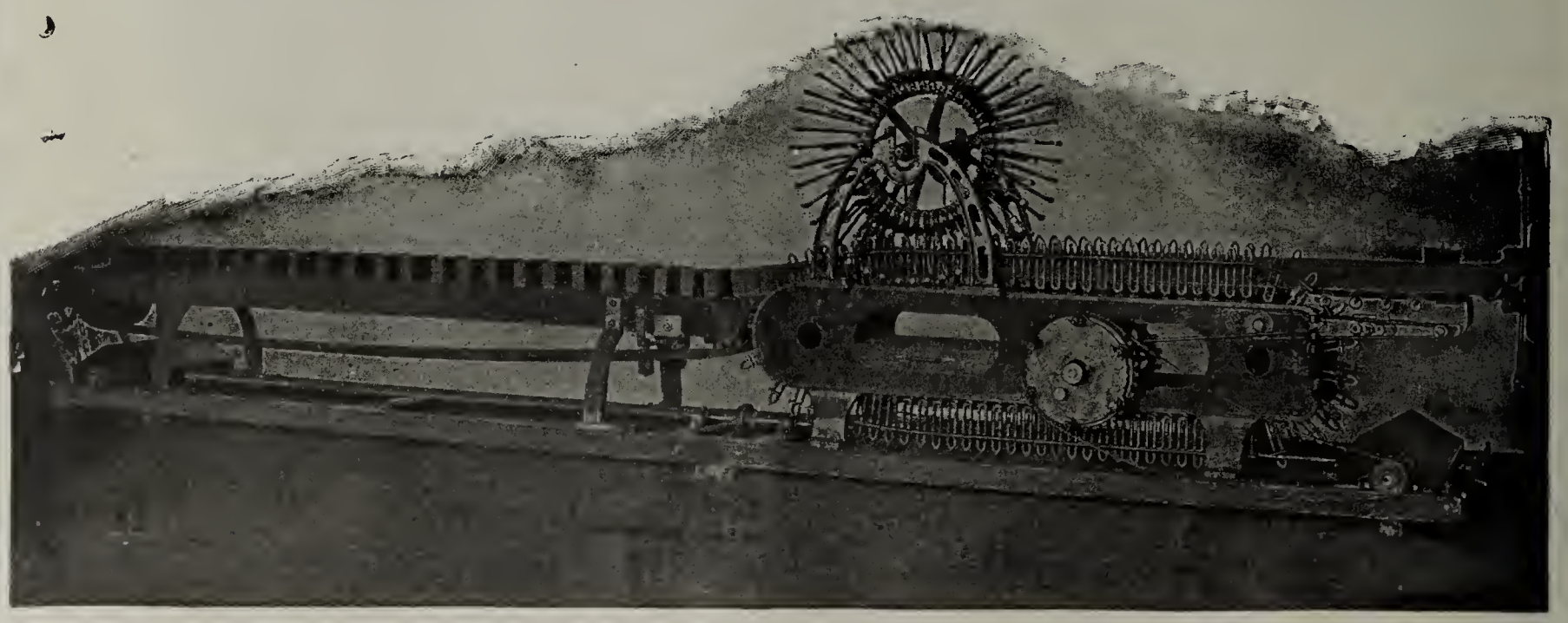
Combined Brick Machine

THE PREMIER LINE. THE J. D. FATE COMPANY

THE LARGEST LINE OF AUTOMATIC CUTTING TABLES IN THE WORLD



WITH BENSING'S AUTOMATIC SIDE-CUT BRICK TABLE.



Make a combination of Brick Machinery which is pronounced by practical brick makers to be the most perfect arrangement of stiff mud machinery now on the market.

It is unequaled for strength, durability, capacity and quality of ware produced.

Write us for catalog and full particulars of the "Premier" line of Clay Working Machinery.

THE J. D. FATE CO., = Plymouth, Ohio

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CLAY RECORD

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THE FIRST STAGE IN FIRING.

It is well known that brick of good color can only be obtained when the earlier stages of the firing are properly carried out, especially when continuous kilns are used. Some notes on this subject by E. Cramer, in a recent number of the Tonindust Zeitung, will therefore be of value to some of our readers, as there are many clayworkers, both here and abroad, who pay too little attention to the first heating of their goods and yet wonder they come out defective.

Various terms are used to denote the earliest stage of firing, in which the goods are raised to a moderate temperature and, with the elimination of the last traces of water, converted from the tender condition of green into the more durable one of "stoved" goods. The most suitable term is, probably, "smoking" or "smouldering," as the fire in an intermittent kiln is usually in a smoky or smouldering condition at this part of the firing; the term "stoving" is less appropriate for the general process, as it stands for one variation of it in which an outside stove is used. The phrase "first-fire" or "low fire" is sometimes employed, but is less convenient than a single word.

SMOKING.

By "smoking," then, is to be understood the final driving off of water and the heating of the clay to such a temperature that the goods will not be damaged if the fire is urged forward; but the term is to be equally applicable whether this preliminary heating is carried out by special appliances or not.

The extent of the smoking must depend on the condition of the goods on entering the kilns; it will be least when they are placed hot from the driers, and greatest when very damp goods are set. It will also depend on the size of the kiln, as the radiation of heat from the walls of small chambers will often be sufficient to smoke them efficiently. There can, therefore, be no standard method which may be used indiscriminately in all cases; modification must be made to suit local conditions.

KILN-GAS EFFECTS.

The principal reason for raising the goods to a fairly high temperature in continuous kilns before the fire is allowed to reach them is that the kiln gases usually contain substances which will deposit condensation products on cold goods, and so damage and stain them. There is also the question of the ability of the clay to withstand sudden changes in temperature before it is baked, and the consequent need of a more gradual heating than is possible when the kiln gases are allowed to enter directly into the kiln at this stage. The same effect is also obtained in intermittent kilns, but the front tiers of goods usually receive most of the condensation products in this case. It is, of course, possible to lower the temperature of the kiln gases to (say) 212 deg., F., but if this be done the draught is so seriously diminished that a chimney will not draw and a fan must be used.

FUEL EFFECTS.

Fuels are chiefly composed of carbon and hydrogen, with varying quantities of oxygen, sulphur and mineral matter. The air consists mainly of oxygen and nitrogen, but only the oxygen is of use in burning; the nitrogen merely serves as ballast, and prevents combustion taking place too rapidly. In burning, the carbon and oxygen combine to form carbonic acid gas, the hydrogen and oxygen unite to form water, and the sulphur enters into combination with both oxygen and water to form sulphurous acid. If the combustion is not complete other products are also formed, the consideration of which may be postponed and attention concentrated on the three normal products—carbonic acid, sulphurous acid and water. These two acids only possess the power of acting on the goods in presence of actual drops of water; if these are absent, as when the goods are too hot to allow the steam to condense on them, no effect is produced.

The carbonic acid is without action on pure clay, but it combines with any chalk or lime present. The sulphurous acid acts on the clay, forming aluminium sulphate, and also on any lime compounds present, forming calcium sulphate. These salts spread themselves in the surface of the goods, are decomposed at a later stage in the firing and are finally found as a dirty white scum on the finished goods, if these were sufficiently damp and cool for the kiln gases to con-

dense on them. This variety of scum cannot form on dry, hot goods.

The amount of water which kiln gases can carry in the form of vapour increases rapidly with their temperature, being about sixty times as much when the gases are at 212 deg. F. as when cold. On cooling below 212 deg. F., a portion of this water-vapour is thrown out, the quantity so condensed varying with the drop in temperature—thus 1 cubic yard of saturated kiln gases cooling from 212 deg. F. to 194 deg. F. will deposit over 6 ounces of water, and, if the cooling be continued to 174 deg. F. almost half the original quantity of water in the gases will be condensed into "mist." It is, therefore, of the greatest importance not to allow the gases in contact with goods to fall below 212 deg. F.; hence the goods must be raised to this temperature before the kiln gases are used for direct heating.

METHODS OF "SMOKING."

Various methods of safely heating the goods are in use in continuous kilns, the two most important being (1) the use of a special stove ("stoving") and (2) the use of air drawn over goods which have been fired and are cooling.

The latter method is preferable, as the air heated in this way is free from acids, whilst the gases from the stove can contain both acids and water. In some cases, however, as when goods are fired very rapidly and at a low temperature, it is not possible to obtain a sufficient supply of hot air from the cooling goods, and a supplementary source must be found: a stove may then be used.

If the clay will stand a rapid rise of temperature, after say, 176 deg. F., very hot kiln gases (480 to 570 deg. F.) may be turned in, with or without admixture with air, so long as the temperature of these gases on passing away from goods is not under 300 deg. F. Scum cannot form with gases at this temperature, because they are too hot for the acids to have any appreciable action on the goods. It is necessary that the goods be thoroughly dry before the hot gases are applied, or the rapid development of steam in the goods may cause them to split and crack.

PRECAUTIONS.

Smoking-stoves are often condemned unjustly because the firemen do not understand their use. They should be so managed that the fuel in them is fully burned and yet that the gases produced are so diluted with air that the temperature of the mixture is not excessive. It is not good practice to pass all this air through the fire-bars of the stove—such a proceeding only cools the fuel and wastes it—but the correct amount of air required by the fuel should pass through it and the remainder be mixed in later—but before the gases enter the kiln. The exact proportion of air needed for the stove will vary with the temperature of the goods in the kiln. It will be large at first and gradually diminish as the heating proceeds, and will also vary somewhat with the nature of the clay and the form of the goods.

It must not be forgotten that the firing and management of a stove should have as much care and attention as the kiln itself, if the best results are to be obtained.

It is always desirable to stove as rapidly as the goods will permit, since fuel is thereby saved as well as time, but these economies must not be carried to excess or the goods will suffer.

AMOUNT OF HOT AIR NEEDED.

The most generally suitable temperature for the air (or air and stove gases) at the beginning of the smoking is about 104 deg. F., and, as the volume required is frequently greatly under-estimated, the following example will show how the necessary quantity may be roughly ascertained. An exact figure is scarcely possible, as there are losses due to radiation, etc., so that the figures obtained by calculation always tend to be below the truth.

Assuming that one chamber holds 8,000 brick each weighing 7 lbs. and containing ½ lb. water, this chamber will contain 52,000 lbs. clay and 4,000 lbs. water. In order to drive off these 4,000 lbs. of water the brick must be heated from 60 deg. F. to 212 deg. F., *i. e.*, a rise of temperature of 152 deg. F., for which 4,000x150, or 608,000 heat units (B. T. U.), will be required, and in addition to this a further quantity of 4,000x967, or 3,868,000 heat units, will be needed to convert this water into steam. The specific heat of clay being 0.2, the heat absorbed by the bricks in raising their temperature 152 degrees will be 52,000x152x0.2, or 1,580,800 heat units, so that the total heat required before the kiln gases can be allowed to enter the chamber will be *at least*

608,000	heat units	for water,
3,868,000	"	" latent heat of steam,
1,580,800	"	" bricks,
6,056,800	"	equivalent to about 4 cwt. coal.

If in passing through the chamber the hot air used to warm the goods falls 100 deg. F. it follows that (the specific heat of air being 0.24) each pound of air will lose 100 x .24, or 24 heat-units; consequently for this air to supply sufficient heat for smoking the goods (viz., 6,056,800 heat units) at least 6,056,800 ÷ 24, or 252,367 lbs. of air, will be required. If the smoking take 3 days this will be equivalent to 3,505 lbs. of air per hour, or 750 cubic feet per minute.

Athough apparently complicated, this calculation is not difficult, and it will often show the cause of numerous cases of scum, viz., too little hot air. In this connection it is important to see that the chimney is capable of the task given to it, for not only is one chamber being stoved but others in full fire are discharging their gases into the same chimney.

It will be clear that a considerable amount of fuel (amounting in the example given to 56 lbs. per 1,000 brick) is used to raise the goods to a temperature sufficiently high to prevent condensation products settling on them, and that, where the waste heat of cooling kilns can be used for this first stage of the firing a notable economy of fuel will result, in addition to the advantage of using hot air free from the products of combustion.

KENDALL & FLICK NOT TO RETIRE, AS IS REPORTED.

The report has been circulated, kindly, intentionally or otherwise that the well-known firm of Kendall & Flick, of Washington, D. C., manufacturers, dealers and miners of manganese, are about to retire from the business. There is absolutely no truth in this statement. They are in the business to stay and each year are doing a much larger business. They supply all the large brick manufacturers with manganese and assume the goods are satisfactory.

ONE HUNDRED AND TEN PLANTS ARE LOCATED IN THE HUDSON RIVER VALLEY —A BIG INDUSTRY WHOSE OUTPUT AGGREGATES MILLIONS YEARLY.

The Hudson River Valley has become one of the greatest brick manufacturing districts in the world. The industry employs thousands of men and the annual value of its products aggregates millions of dollars.

A bulletin just issued by the State museum, prepared by David H. Newland, B. A., assistant state geologist, says: "The clay working industry in this state has gained steadily in importance. The output during 1904 was valued at $11,504,704, showing a large increase over the total for any previous year. Building materials (brick, tile, terra cotta and fire proofing), constituted the principal part of the production. The Hudson River district alone reported an output of brick valued at $5,846,097."

The distribution of clays in New York, as well as their character, uses and industrial development, have been exhaustively described in a report by Heinrich Ries. The most valuable deposits now under exploitation in this state are those along the Hudson river. According to Dr. Ries, the deposits belong to two types: (1) Estuary deposits of stratified sand, blue and yellow clay, and (2) cross bedded delta deposits composed of much coarser materials than those of the first class. The clays are normally blue, but commonly show weathering on the surface when they change to yellow. With the alternating layers of sand, they form terraces that extend along either shore of the river at altitudes ranging up to over 300 feet. The workable beds attain a thickness of 100 feet or more. Some of the more prominent localities whose clays are utilized for brickmaking, are Haverstraw, Croton, Stony Point, Verplank, Peekskill, Cornwall, New Windsor, Dutchess Junction, Fishkill, Roseton, Poughkeepsie, Kingston, Saugerties, Catskill, Hudson and Albany. The product of this region is confined to the common grades of building brick. The northern and central portions of Long Island contain Cretaceous clays, some of which are adapted for stonework and coarser pottery.

Geologist Newland, in his bulletin, says: "Owing to the extensive market afforded by New York city, and the low cost of transportation by river, the brickmaking industry of the Hudson is exceptionally situated so far as commercial conditions are concerned. There is probably no other region in the world where the manufacture of brick has attained to similar proportions." The counties included in this district are Rensselaer, Albany, Columbia, Greene, Ulster, Dutchess, Orange, Rockland and Westchester. With the exception of Albany and Rensselaer, which probably consume the greater part of the local product, the output of the Hudson river is marketed almost entirely in the metropolis.

During 1904 the number of brick made was 1,009,838,000, valued at, as before stated, nearly six million dollars. This total represents about 78 per cent. of the entire product of the State of New York. There were 110 companies reporting as active, of which Rockland county was represented by the largest number, 34, while Ulster was second on the list with 21, Dutchess third with 17 and Orange fourth with 9. The price reported for the entire district averaged $5.79 per thousand. The average number of brick made by each plant was 9,180,000. Two companies, Ryan & McFarren of New Windsor, and Coyne & Tanney of Haverstraw, reported an output for the first time in 1904. Several new concerns, including the Newburgh Sand Lime Brick Co., of New Windsor, began operations this year. The figures on brick manufacturing by counties last year are as follows:

Albany, number of plants, 8; output, 78,500,000; value, $426,973; average price per M., $5.90. Columbia, number of plants, 4; output, 73,280,000; value, $420,500; average price, $5.74. Dutchess, number of plants, 17, with a total output of 167,319,000; value, $932,907; average price, $5.98. Greene, number of plants, 4; output, 38,951,000; value, $232,924; average price, $6.12. Orange, number of plants, 9; output, 121,803,000; value, $690,064; average price, $5.67. Rensselaer, number of plants, 6; output, 17,232,000; value, $85,964; average price, $4.98. Rockland, number of plants, 34; output, 239,813,000; value, $1,422,436; average price, $5.93. Ulster, number of plants, 21; output, 219,106,000; value, $1,274,284; average price, $5.82. Westchester, number of plants, 7; output, 54,734,000; value, $324,045; average price, $5.92.

The number of brick manufactured in the entire state was 1,293,538,000 all but 283,708,000 of which were manufactured in the Hudson valley.

ANOTHER INCREASE OF TWENTY-FIVE CENTS A THOUSAND FOR HUDSON RIVER BRICK.

An increase of twenty-five cents a thousand for Hudson River common brick, over last week, is noted, says the New York Record and Guide, so that the top price has reached $8.25. Eighty cargoes arrived last week and were sold.

For the week ending July 29, the sales amounted to 96 cargoes, and for the week before 72.

Brick are being shipped faster this year than ever before and, consequently, the stock on hand, at the yards, is less than usual at this stage of the season. Good weather has favored both manufacturing and shipping.

Values are high, but no one can tell how they are going to move during the rest of the season, any more than we can predict the weather.

WORKED CHILDREN UNDER AGE AND PAID $25 FOR THE OFFENSE.

Deputy Factory Inspector L. L. Knisely, of this city, returned to Harrisburg from Perry county with $25 which was collected as a fine from the Newport (Pa.) brick works.

Alleging that children were being employed under the age prescribed by law and that they were also being employed without certificates, the Department of Factory Inspection brought suit against the head of the brick works, E. L. Fluery.

Fluery pleaded guilty and said he wouldn't let it occur again. The fine imposed was the minimum, but he had to pay the costs, too.

JEFFREY BELT CONVEYOR.

The accompanying illustration shows a very interesting Jeffrey Belt Conveyor recently installed by the Logan Brick Manufacturing Company of Logan, Ohio. This conveyor is used for the purpose of removing several feet of stripping, (top soil and impure clay), to a refuse dump on the opposite side of the track, and has been in operation long enough to demonstrate to the entire satisfaction of the purchaser its efficiency and economy.

The conveyor proper consists of a belt 20 inches wide and the material is carried a distance of about one hundred feet. The conveyor is mounted on a portable wooden truss, has a capacity of 60 or 70 tons per hour, and is operated by a six horse power gasoline engine, mounted on the same frame. This engine, however, is much larger than actually needed, being put in for future extension. With this method of stripping, the work can be done a great deal cheaper and quicker, and the arrangement might appeal to others who have similar work.

The machinery and equipment is furnished by the Jeffrey Manufacturing Company of Columbus, Ohio, who make all types of elevating and conveying machinery, and will be glad to correspond with interested parties.

This company also maintains branch offices at New York City, Chicago, Denver, St. Louis, Boston and numerous special agencies for the convenience of prospective purchasers.

F. E. Lamboley is promoting a sand-lime brick plant at Peoria, Ill.

A NEW MARKET FOR THE BUILDING INDUSTRY.

Since the secession of Panama, Barranquilla has been the chief port of Columbia, and through it the bulk of the country's import and export trade is carried on. The city has undergone great improvement during the last few years, and the municipal council is making arrangements for the electric lighting of the city and for an electric tramway system.

There is a good demand for men's underclothing, prints and domestics, and for ready-made boots and shoes. Mining machinery is being constantly required, and there is every prospect of large quantities being imported in the future, as new mines are being opened up and developed. Catalogues advertising goods should be printed in Spanish, the weights being given in kilograms and the prices stated in United States gold.

Recently a large factory was established at Barranquilla for the manufacture of artificial sandstone brick for building purposes. This industry promises to be one of the most important of the country, as the supply of raw material is inexhaustible, the geological formation for miles around Barranquilla being coral limestone covered with a stratum of sand varying from 4 to 10 feet in depth. The factory has a productive capacity of 1,000,000 brick per month. In addition to the standard size brick, fancy brick, colored fancy tiles for flooring, tiles for roofing and building material of every description can be supplied.

NEW ENGLAND COMPANY DISPOSES OF ITS ENTIRE OUTPUT.

In an interview Virgil Palmer, of the New England Brick Company, with an office on Church street, New Britain, Conn., stated that the company had already disposed of the entire output of its yards, amounting to 75,000,000 brick, and added that of this number 5,000,000 would be used in the new houses which are being erected in New Britain.

The remainder of the output will go to different parts of New England and a large part to New York City, where the market has been opened up to the local company to a much larger degree than ever before.

Mr. Palmer said that there are so many apartment houses being built in the vicinity of the Bronx that, coupled with other demands for brick, this renders the yards in the vicinity of New York unable to fill the orders.

The yards in this vicinity will turn out their full capacity of brick this year and if the present demand continues some provision will have to be made for increasing the supply next year.

THOMAS MADDEN SELLS OUT BUSINESS.

Mrs. Bernard Madden has purchased the interest of Thomas Madden, in the firm of Madden & Co., manufacturers of tile and brick machines at Rushville, Ind. The business will be continued as heretofore under the style of Madden & Co. Bernard Madden, Sr., will have charge of the foundry work while his sons, Bert, Lawrence and Frank, will run the machine room. Miss Teresa Madden will have charge of the office work, as in the past. The firm is busily engaged in getting out a large tile mill for Williams Bros., of Sweetzer, Ind.

TARIFF MAKERS MIXED IN CLASSIFYING BRICK.

In a decision written by General Appraiser McClelland, the Board of United States General Appraisers sustained a protest filed by O. G. Hempstead & Son, of Philadelphia, and held that so-called magnesite bricks come within the meaning of the term "fire bricks" as used in the Dingley tariff law.

The case has attracted considerable attention in importing circles, and among domestic manufacturers of bricks. Both the Treasury Department and the American makers of bricks have recorded their opposition to the claim of the Philadelphia importers for lower duty, the former because it is unwilling to suffer a loss of revenue, and the latter on account of the fear that the foreign material will unduly compete with brick made in this country. It was said yesterday that the bricks are used extensively in lining open-hearth furnaces because of their fire-resisting qualities.

The merchandise was invoiced as "magnesite bricks," and was returned by the appraiser as "magnesite bricks, as other than fire-brick, not glazed or ornamented in any manner." Duty was assessed at the rate of 25 per cent ad valorem under the provision in paragraph 87 of the tariff act of 1897 for "brick, other than fire-brick, not glazed, enameled, painted, vitrified, ornamented, or decorated in any manner," and it is claimed by protestants that duty should have been assessed at the rate of $1.25 per ton under another provision in said paragraph, for "fire-brick, weighing not more than 10 pounds each, not glazed, enameled, ornamented, or decorated in any manner."

The testimony taken at the hearing was voluminous and the purpose of the government was to establish in support of the collector's classification, that the term "fire-brick" is a commercial term, and that as that term is understood in trade it signifies fire-clay brick, while the evidence on the part of the importer was directed toward establishing the fact that the use of brick, without regard to its composition, must determine whether it is fire-brick within the meaning of paragraph 87.

General Appraiser McClelland says, in his decision, that from the trend of the testimony before him, it is impossible to escape the conclusion that, aside from the issue between the government and the importers as to the correct rate of duty assessable on magnesite brick, there is involved a controversy between the importers and domestic manufacturers of fire-brick. Mr. McClelland adds that this phase of the case forces the board to the view that at least some of the government witnesses are not wholly disinterested. The provisions in the present and in previous tariff acts for bricks are analyzed at length. The general appraiser then says, in part:

"Strange as it may seem, Congress thus provided for magnesic fire-brick, while it has been testified in this and other cases before the board that in trade there is no such thing known as 'magnesic fire-brick,' but it is difficult to believe that Congress deliberately provided for an article thus by name that had no existence, especially since trade experience and commercial usage are known to be the very basis of the arrangement of tariff schedules. Even if it be assumed that, in arranging that part of the tariff act of 1894 covering bricks, there was an error in the use of the word 'magnesic,' we think the most that we would be justified in believing in that behalf would be that it was used instead of 'magnesite' or 'magnesia,' for at the time of the passage of that act magnesite brick had already been imported into the United States and had been the subject of the board's decision, G. A. 2595, in which it was held that, under the tariff act of 1890, which, we have pointed out, was, so far as the question involved was concerned, the same as the existing law, such brick were dutiable at the rate of $1.25 per ton as fire-brick."

After receiving a report from the government chemist at New York, the board was able to reach definite conclusions concerning the customs classification of magnesite bricks. On this point the board says:

"From this very comprehensive report we may draw the conclusion that scientifically there is no such thing as magnesite brick, for, as stated, in the process of manufacture the carbon dioxide is expelled, leaving only magnesia, and therefore the result of such processes is, strictly speaking, magnesia bricks, and, as it is explained that the expression 'magnesic' is the adjective which may properly be employed in referring to magnesia or magnesite, the provision for 'magnesic fire-brick' in the act of 1904 may thus be said to be accounted for.

"We do not think that the government has succeeded in establishing the term 'fire-brick' as used in the tariff act is limited in its meaning to fire-clay brick, nor do we think there is a single feature in the case that justifies the inference that Congress intended that there should be such limitation. These conclusions seem all the more justified when we contemplate what would be the effect of such limitation in the assessment of duty on the three classes of brick used as fire-brick on account of their refractory nature, viz., fire-clay brick, silica brick and magnesite or magnesic brick.

"There would be a duty of $1.25 per ton on fire-clay brick, and on silica brick—which is conceded to be of about equal value and used for the same purposes—at the rate of 25 per cent ad valorem, the amount of duty assessed, based on the average import value, would be equal to about $3 per ton, while on the so-called magnesite brick, also used for practically the same purposes, at the same rate of 25 per cent ad valorem, based on the average import value of such merchandise, the amount assessed would be equal to about $6 per ton.

"On the whole record before us we find that the brick in question are fire-brick within the meaning of said paragraph 87 of the tariff act of 1897 and dutiable as claimed by the protestants.

"The protest is sustained and the decision of the collector reversed."

The Reliance Cement Company, Philadelphia, Pa., has been incorporated with $50,000 capital.

POTTERY TRUST NOT FEASIBLE.

"A plan to consolidate all of the potteries into a combination is not feasible," said Henry S. Maddock, the popular pottery manufacturer of Trenton, N. J.

Mr. Maddock said he has had several letters from Newton Jackson, the promotor of the combination, but the Thomas Maddock & Sons and the Maddock Pottery company have rejected all offers for any such a scheme.

The plan of Mr. Jackson does not meet with favor among the local concerns, as they do not see any advantages in a combination.

The pottery situation in the west is believed to be in such a bad condition over the cutting of prices and "scheme manufacturing" that almost anything is welcomed in that section by the manufacturers to end the losing battle. But here in the east the situation is much healthier and the potteries are doing well enough without going into a combination that might bring the western situation on here.

The East Liverpool Daily Review says:

"The plants will be purchased by the combine outright and paid for in cash. The stock will then be issued and put on the New York and Pittsburg exchanges.

"As soon as it was learned that Jackson was able to back up what he said and that his scheme was feasible and bona fide, the local manufacturers were ready and willing to meet him half way, and fully 75 per cent. of the local kiln capacity had been optioned. A self-constituted committee is to act for the manufacturers, and further the plans as originally outlined with a view of interesting as many of the American potters as possible. In this city, H. A. Keffer, of the Sevres company, and Joseph G. Lee, of the Knowles, Taylor Knowles plant, have been more active than any of the others. The Homer Laughlin China company would not make a deal and the Sebrings have held aloof to the present, but it is known that a majority of the best equipped and most progressive manufacturers in the East Liverpool district have signified their willingness to join the combine, and have backed up that opinion by giving the desired option.

"At Wheeling the concern known as the Wheeling Potteries company has been optioned, according to the latest reports, and this opinion is borne out by the fact that the stock of the latter company has been advanced several points during the past few days. As is customary when matters of this character are pending, the stockholders and officials are reticent until after the transfer is actually accomplished. Of late the potteries, excepting those engaged principally in turning out sanitary ware, have been working, almost from hand to mouth, it is said. The market for fine ware is very sluggish, owing to the inroads made by the large production of scheme ware for department stores, soap and spice manufactories, etc. Those few potteries who have attractive lines of new shapes and designs are doing fairly well, but are not so strong as they should be.

"Considering the state of affairs, with no better prospects for the future, it is not unreasonable to suppose that the consolidation scheme in which 200 or 300 kilns, sufficient to control the markets, can be combined under one head, would be welcomed by them.

"Just as soon as the details can be completed headquarters will be established in this city, where it is proposed to locate the main offices of the combine. The big company will erect a building of its own from which all of the business will be transacted.

"Representatives of the three Philadelphia banking institutions were in East Liverpool Thursday last and a long conference was held with a number of the local manufacturers. It is understood the latter are entirely satisfied with the financial part of the proposition, and that the important deal will undoubtedly be closed within the next few weeks."

The above article was shown to the leading manufacturers and they all denied being a partner to any such scheme.

They look upon the move in the same light as some of the latest exploits in the financial market in regard to industrial combinations.

"Why, this will be nothing more or less than selling your plant to the combination and then buying it back again after you have given some one the profit for forming the combine," said a manufacturer who employs over 600 hands yesterday.

SALT LAKE FACTORIES ARE MORE THAN ABLE TO SUPPLY THE DEMAND.

Brickmakers of Salt Lake, Utah, are complaining of the lack of demand for the output of their factories in spite of the large number of houses in course of construction. One company alone has 5,000,000 brick on hand now, when the yards should be cleaned out. This company could produce 10,000,000 or 12,000,000 additional brick before the close of the season if there were a demand for them, but the demand is not in sight and for that reason the factory is not running anywhere near its full capacity. It was hoped that the large reduction plants planned by the Bingham companies would be started this fall and swallow up the surplus brick on hand and a start may yet be made this fall in this direction.

The Salt Lake brick factories could now make 100,000,000 brick in a year if run at full capacity. A few years ago the local factories could not supply the demand for brick. At that time a campaign of enlargement was begun until the capacity was practically doubled. Now the demand is not up to the capacity of the factories so that the large ones are not running at full capacity and have not been so running since the opening of the season. One of the large factories makes a sufficient number of brick every day to build two or three ordinary residences. It will be readily seen from this that the erection of cottages in the city is hardly sufficient to keep the factories running at full capacity without the aid of large smelters, business blocks and the like.

The Purington Paving Brick Co., Galesburg, Ill., has been awarded a contract for 3,000,000 paving brick to be delivered at Colon, Panama, to be used in paving the cities of the Panama Canal zone.

DETROIT HAS TWELVE BRICK MANUFACTURING CONCERNS.

One of Detroit's biggest building industries is brickmaking, though all the plants are located along the clay banks in Springwells. There are twelve large concerns, which annually turn out 200,000,000 common building brick, the value of this product being about $1,700,000. Moreover, this immense product is marketed within the state, and Detroit, of course, is the biggest and most insistent customer.

At the present time the demand far exceeds the supply, but modern methods are gradually coming to the rescue by doing away with the open yards and installing a system by which the plants can be operated the year round. Springwells has always been an important brick center, and Michigan now stands twelfth in the production of common brick.

It is not so many years ago that brickmaking was a most laborious task, nearly all the labor having to be done by hand, while the sun was relied upon to dry the brick. Now big steam shovels are used for digging out the clay and conveying it to the pressing machines. The molds are piled on trucks which are pushed into immense drying sheds, where steam or an air-draft dries them. When dry they are placed in a kiln to be burned. Then they are cooled, after which they are ready for use.

Nature plays an important part in the manufacture of brick and, as well known, nature cannot be hurried. It would take nearly a month to make a single brick, but the quantity manufactured offsets the length of time required. Some of the big plants are turning out 70,000 brick a day, which means using up over 170 tons of clay.

Michigan avenue was formerly an endless procession of brick wagons, but this has been done away with. The brick is now loaded into cars and hauled to a convenient distributing point on the belt line, the city being divided into sections for that purpose. In this way, a supply is always on hand and much time is saved.

HYDRAULIC STONE AND BRICK COMPANY ORGANIZED.

The incorporation of the Hydraulic Stone and Brick Co., with a capital of $80,000, has been completed. The main office will be in Milwaukee and the plant is located just northeast of this city, the new company buying the plant of the Pick Brick Co., at West Bend. The officers and directors of the new company are: Andrew Pick, president; A. J. Pick, vice-president and superintendent; P. G. Turner, secretary; W. B. Potter, treasurer, and A. H. Spoor.

The purpose of the organization is the manufacture of wet process concrete building blocks, and the necessary machinery has already been installed and the goods will, therefore, be on the market in a day or two. Considerable orders have already been secured, insuring a paying business from the start.

The sale of the plant of the Pick Brick Co. to the new organization does not indicate that the manufacture of sand brick will be discontinued; on the other hand, the capacity of the present plant will be doubled and the business will be run on a still larger scale.

The company also has taken over the plant of the Silica Brick & Stone Company, at Janesville.

THE ROBINSON CO. TO MANUFACTURE SILICA BRICK.

What will be the largest silica brick plant in Ohio, and one, the capacity of which will be as great as any similar brickmaking industry in the country, will be built by the Robinson Clay Product Co., of Akron, O., upon what was known as the Jacob Metzler allotment, along the B. & O. railroad, near the city limits, East Akron.

This silica brick plant, which promises to become one of the most important industries under control of the Robinson Clay Product Co., will have a capacity of 15,000 silica brick a day.

The product which this plant will manufacture, it is said, will be of a very high grade, and will stand extreme heat. The company will supply the silica brick to glass works, acid and basic pudding furnaces, open hearth and steel furnaces and forge furnaces, which require a grade of brick that will stand great heat. From tests, the sample of brick this company will manufacture has stood all tests perfectly, where other makes of brick melted away.

Several tunnels will be constructed where the brick will be put through a drying process, waste heat from the kilns—of which there will be six,—to be used in the drying process. Over these tunnels a dry floor for making shape brick will be erected. The tunnels will be 100 feet long and 50 feet wide.

The six kilns to be used in burning the brick will be very large and of modern make, and each will have a capacity of 80,000.

A 250 h. p. engine will be used in supplying power to run the heavy crushing machinery to be installed, and connected with the boiler and engine rooms a 125-foot stack will be erected.

Mr. Henry B. Sperry, connected with the Robinson Clay Product Co., and who for the past fifteen years has managed and controlled what is known as the J. Park Alexander brick plant, of Akron, will be manager of the new silica brick plant, and he is also superintending its construction. The new plant will be completed some time this fall, and will give employment to many men, it is said.

This will make the third brick plant which the Robinson Clay Product Co. will control, another being located at Canal Dover, Ohio, where fire clay brick is manufactured.

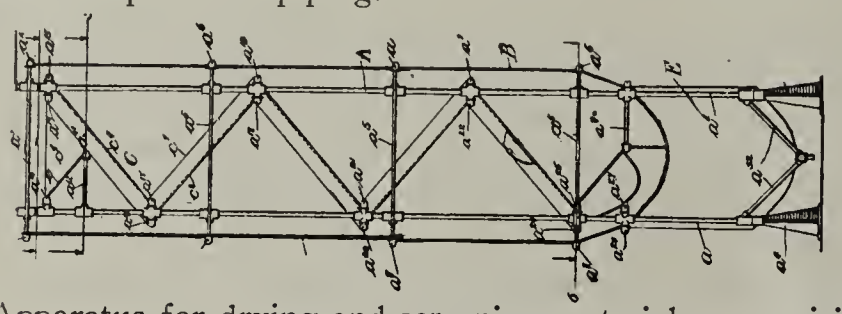
When planning a business or pleasure trip from Chicago to Buffalo, New York or any Eastern point, you should investigate the satisfactory service afforded by any of the three express trains operated by the Nickel Plate road. Colored porters are in charge of coaches, whose duties are to look after the comfort of passengers while en route. Special attention shown ladies and children, as well as elderly people, traveling alone. No excess fare charged on any train on the Nickel Plate road. American club meals, from 35 cents to $1.00, served in Nickel Plate dining cars. One trial will result to your satisfaction. All trains leave from La Salle street station, only depot in Chicago on the elevated railroad loop. Call on or address John Y. Calahan, general agent, 113 Adams street, room 298, Chicago.

NEW INVENTIONS THAT ARE OF INTEREST TO THE CLAY MANUFACTURER.

These new inventions are those that are especially of interest to anyone engaged in the line of building materials and their manufacture, or machinery to make them:

795,349. Apparatus for Screening and Drying Materials. John J. Gledhill, Chicago, Ill. Filed April 20, 1903. Serial No. 15,357.

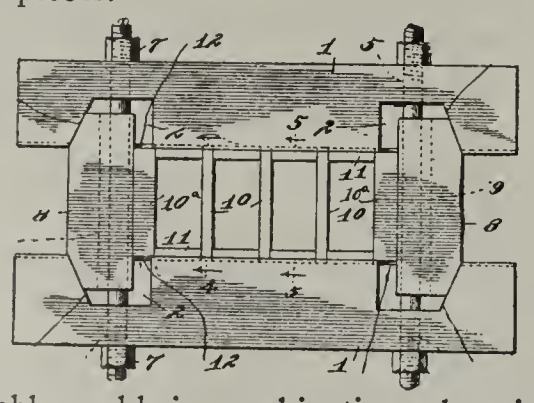
Claim.—Apparatus for drying and screening materials, comprising an upright framework composed of a system of steam-pipes for supplying the heat, a plurality of angularly-disposed screening devices mounted on said piping, and a casing or inclosure composed of sheet-metal sections also mounted upon said piping.



Apparatus for drying and screening materials, comprising an upright framework composed of a system of steam-pipes, a hopper at the top of said framework, a pair of discharge-spouts at the lower end of said framework, a series of screening devices extending in zigzag fashion from the hopper to said spouts, and a sheet-metal casing inclosing the pipes and screening devices, said piping constituting the sole means for supporting the casing and screening devices, and for heating the interior of the casing, the chamber provided by said casing terminating at its lower end in one of said discharge-spouts, and the zigzag path or channel provided by said screening devices terminating at its lower end in the other of said spouts the casing being composed of separable sections removably mounted on the said pipes.

795,784. Separable Mold for Brick-Presses. Matthew J. Welling, Chicago, Ill. Filed Nov. 28, 1904. Serial No. 234,614.

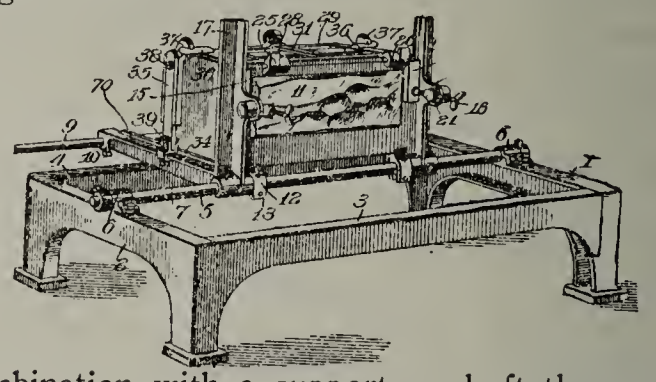
Claim.—In a separable mold, in combination, clamping side bars and end pieces having inclined surfaces on the one adapted to engage with corresponding surfaces on the other, said end pieces having longitudinal openings extending therethrough of elongated cross-section; screw-threaded rods extending loosely through said side bars and through the openings in said end pieces; nuts on said rods; and mold-facing bars adapted to be clamped between said side bars and end pieces.



In a separable mold, in combination, clamping side bars having coinciding openings in their inner faces, one wall of each of said openings being inclined; clamping end pieces opposite openings in said clamping side arms, the inner having chamfered ends adapted to lie upon the inclined walls of said openings; side facing-bars adapted to be clamped between said side bars and end pieces to form a mold, the side facing-bars projecting to a point between sides of said clamping end pieces being arranged to bear upon said side facing-bars; and means for moving said clamping side bars toward each other to force all of said members together.

795,370. Machine for Manufacturing Hollow Building-Blocks. James W. Shone, Rochester, N. Y., assignor of one-half to John N. Rauber, Rochester, N. Y. Filed Feb. 27, 1904. Serial No. 195,525.

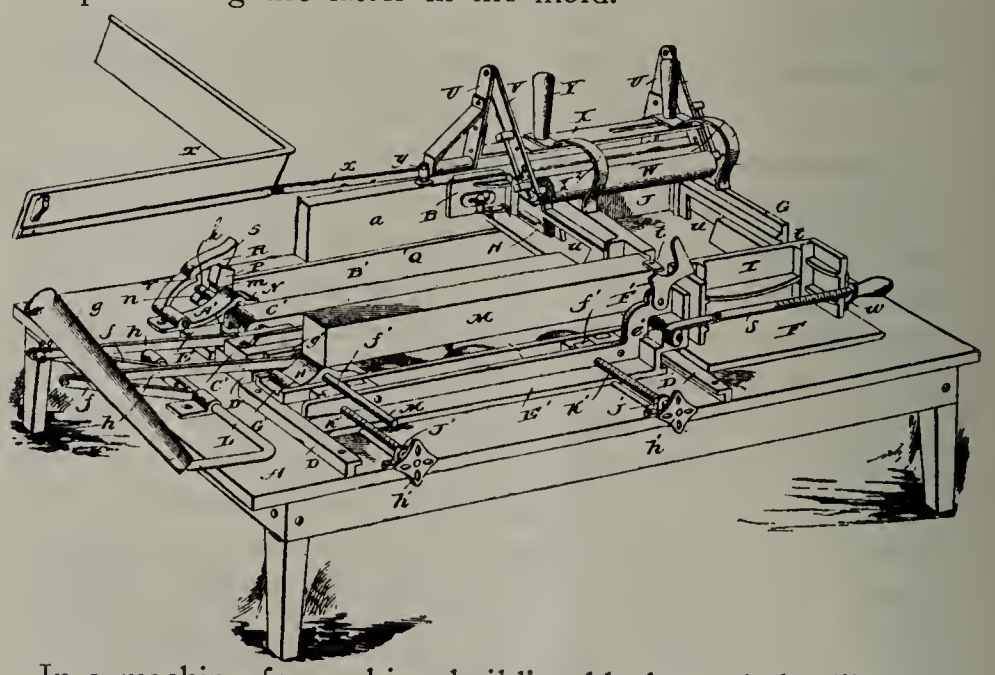
Claim.—1. A mold for artificial-stone blocks embodying the connected bottom, sides and ends and adapted to be titled on its side to discharge the block, said bottom forming a matrix for the face of the block and movable away from the face of the block when the latter is supported on its side to disengage it therefrom.



The combination with a support, a shaft thereon and a frame arranged on the latter having faces extending at right angles to each other, a mold-box side piece supported on one of the faces and a mold-box bottom journaled on the shaft and connections between it and the other face, of a second side carried on the bottom and adapted to open outwardly thereon, end boards co-operating with said sides and means for holding the parts of the mold-box in operative position on the frame.

795,725. Machine for Making Plastic Blocks. Charles H. Nesselroad, Stuart, Iowa. Filed March 31, 1905. Serial No. 253,063.

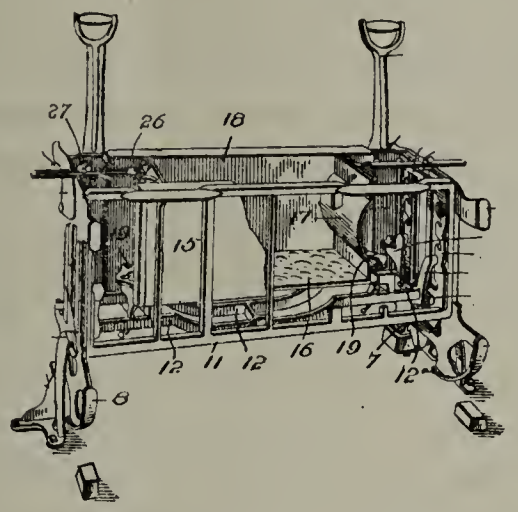
Claim.—In a machine for making building-blocks and the like, the combination with a mold comprising interlocked sections and having passages in opposite sections, an abutment affording a bearing for the mold, a catch disposed at the opposite side of the mold, with reference to the abutment, and arranged to engage the mold, a bar alined with the passages in the mold-sections, and means common to the catch and the bar for engaging the former with the mold and positioning the latter in the mold.



In a machine for making building-blocks and the like of plastic material, the combination with a mold having notches in opposite walls, a groove-forming bar guided in alinement with one pair of notches, a follower arranged back of the said bar, a reciprocatory groove-forming bar alined with another pair of notches in the mold-walls, and a connection between the latter bar and the follower whereby the same move together.

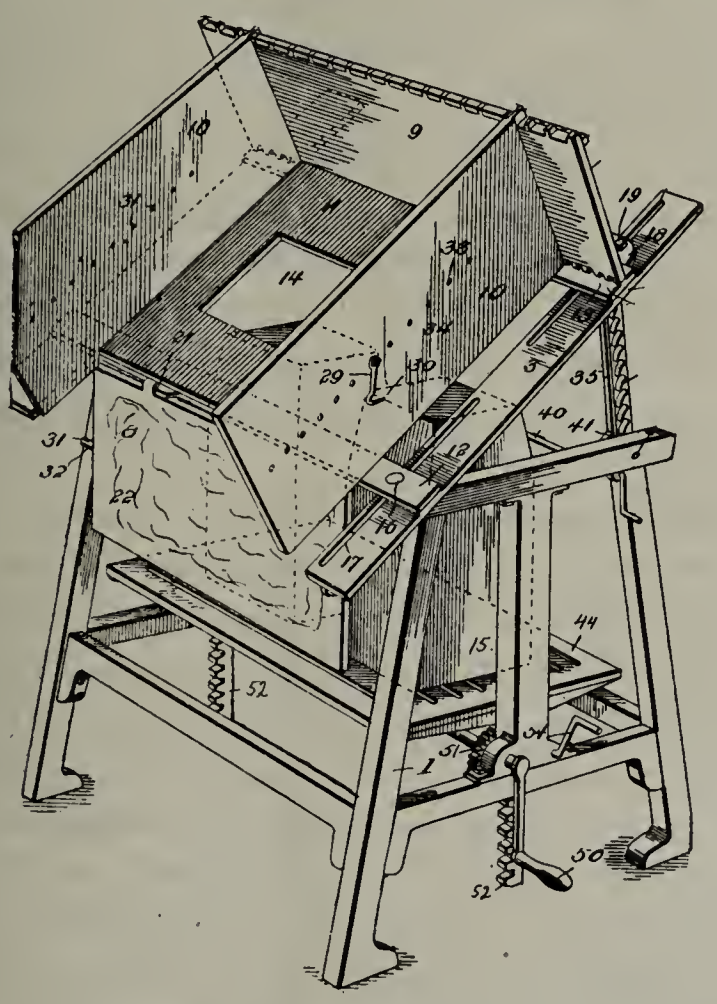
796,139. Block-Mold. Perry B. Miles, Jackson, Mich. Filed Aug. 17, 1904. Renewed May 31, 1905. Serial No. 263,157.

Claim.—In a mold, in combination, a frame, mold-sections supported therein, one of which is openable, slidable bars in the frame, supporting one of said sections, and connections between the said openable section and slidable bars, constructed to operate the bars and the section supported thereby.



In a mold, in combination, an outer tiltable frame having a hinged openable side, sliding bars at the ends of the frame, side and end plates supported in the frame, one of the side plates being carried by the hinged side, hangers supported on the sliding bars, a face-plate carried by the hangers, and cam connections between the openable side and the sliding bars.

796,021. Block-Molding Machine. Ernest W. Smith, Hiawatha, Kans., assignor of one-half to Harvey E. Shumway, St. Louis, Mo. Filed March 25, 1905. Serial No. 251,974.

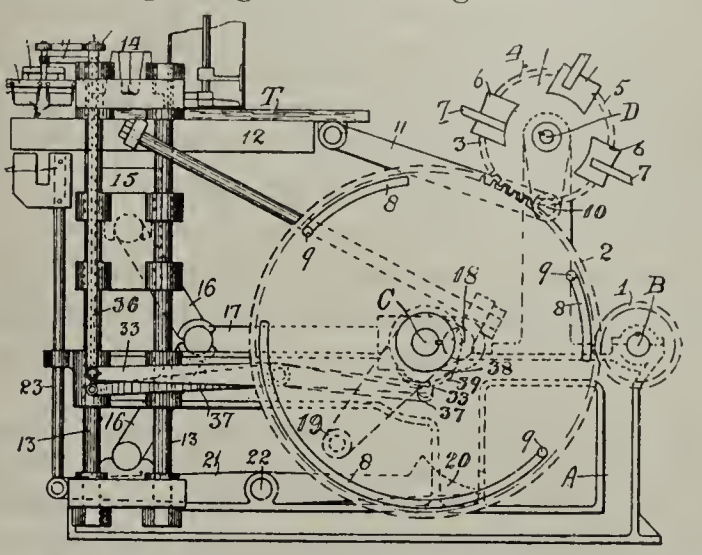


Claim.—In a block-molding machine, the mold-box comprising an adjustable relatively fixed wall, a folding side wall arranged opposite the relatively fixed wall, and laterally-swinging end walls having an adjustable connection with the relatively fixed wall, and a separable connection with the folding side wall.

In a block-molding machine, the mold-box proper comprising a rear wall, a vertically-swinging hinged front wall arranged opposite said rear wall, laterally-swinging end walls having hinge members, hinge-bolts mounted on the rear wall to permit shifting thereof toward and from each other, and fastenings mounted upon the end walls and arranged to secure the front wall in its upright position.

796,191. Brick-Machine. Oliver Congdon and Otto Wuest, Brooklyn, N. Y., assignors to Samson Brick Company, Kings county, N. Y. Filed Feb. 21, 1903. Renewed Dec. 30, 1904. Serial No. 238,876.

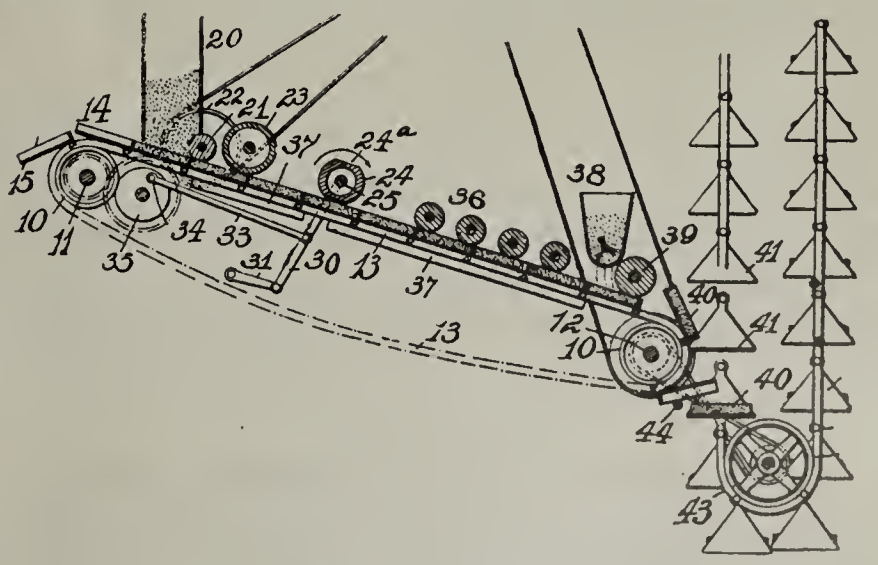
Claim.—The combination of a to-and-fro-moving mold-carrier, a pug-mill or mixer and a fixed platen arranged above the path thereof, said platen being at one side of said mill, a ram and an ejector arranged below said path, the ram beneath said platen and said ejector beyond the platen from said mill, a crank-motion for actuating said carrier, and intermittent gearing for actuating said crank.



The combination of a to-and-fro-moving mold, a die therein provided with shouldered grooves, pins, spring-moved inwardly, for engaging in said grooves to retain said dies, levers for moving said pins outwardly, and fixed cams for actuating said levers, substantially as described.

796,124. Tile-Machine. Frank S. Hutchinson, Flushing, N. Y., assignor to Barrett Manufacturing Company, New York, N. Y., a Corporation of West Virginia. Filed April 14, 1905. Serial No. 255,482.

Claim.—In a machine of the kind described, the combination with the traveling molds and the rollers for compressing and smoothing the material therein, of a second compressing device adapted to squeeze the material in the molds in a direction opposite to the movement of the said smoothing and compressing rollers.



In a machine of the kind described, the combination with the carrying-chains and suitable wheels to guide them, of the molds carried by the chains and arranged to lie end to end, each mold being independently pivoted to the chains so as to swing freely outward independent of the other molds as it passes over the wheels of the chains.

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"I like to read American advertisements. They are in themselves literature, and I can gauge the prosperity of the country by their very appearance."—William E. Gladstone.

When times are dull and people are not advertising is the very time that advertising should be the heaviest. Ninety-nine out of every hundred merchants advertise most when there is least need of it, instead of looking upon advertising as the panacea for their business ills.—John Wanamaker.

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Hot air is all right, but it should be compressed before use.

Any old fish can swim down stream, but it takes a live one to swim up stream.

A man may imagine that his head is going around, when in reality it is only the wheels.

"Work is the soul's sovereign solace. In moments of great sorrow, when neither our own reason nor the sympathy of friends avail, it gives us our only consolation and the soothing sameness of our daily tasks, the narcotic influence of routine, bring with them healing and forgetfulness."

THE CLAY RECORD is the only semi-monthly journal in America devoted to the Clay, Sand-Lime, Cement or Pottery industry. The subscription for 24 numbers is only one dollar (one whole year). Advertisers can get greater benefit at a smaller cost than in any other paper. Try and be convinced. Your ads can be discontinued if not satisfied with the results.

Of the average human being, it may be said with truth that he is indifferent to the past and unconcerned as to the future, and to this weakness may be charged the responsibility for the trials and tribulations experienced in civic life.

There are a few living today who recall the agitation of half century ago against immigration. This agitation was frowned upon and quickly suppressed by the same weakness referred to above. The time being, with its one only consideration to make this country big predominated and the past and the future were ignored. The prophecies of those days have one and all about come true.

This country is now over-populated and yet its population is increased by immigration annually to the extent of more than a million of human beings and these coming from the slums of Europe. There is no question before the people of such vital importance, and yet how painful it is to note so little interest taken in it, and so little concern as to the future of it.

The problem presents many difficulties, one in particular we shall note: The concentration in the large cities of the different races in sections by themselves where is kept alive all the peculiarities of the respective races, and so marked is this that if one could for the moment forget that he were in America, and assume himself to be in that country represented by the dress, manners and habits of the people surrounding him, he would now be in Italy or Hungary or Armenia, or some other foreign land. What does this all signify? We answer that these people are not becoming Americanized, they are not becoming absorbed into our common nationality, and herein lies the difficulty of the problem, and the tremendous danger to our institutions. The lower down in the scale these immigrants, the greater this is, and the more difficult, if not impossible, will it be, to assimilate them.

It seems to us there is but one or two ways, or both taken alternately, to relieve the situation: To stop immigration entirely, or to make the condition of admission so severe that only the best elements in a foreign nation be granted permission to locate here until such times that the conflicting elements among the people, now so plainly observable in this country, are thoroughly assimilated; until this country's population is as distinctly characteristic as are the masses today in any one of the nations from which these immigrants are coming. Again, while this is being arranged, let Congress at once modify present laws, taking immediate effect, lengthing probation for citizenship to ten years, applicable to all unnaturalized persons now in the country.

This may seem stern, and un-American, but the gravity of the situation demands heroic measures.

ACCIDENTS, DAMAGES AND LOSSES.

Attachments have been made on the large plant of the Hilton Brick Co., in San Francisco, Cal. They are for wages and for board and team hire.

H. A. Eudaly, superintendent of the Colonial Brick Co., Kokomo, Ind., saved the 5-year-old son of Roy Thompson from instant death with a runaway horse.

John Liska, a workman at the brick works at Minonk, Ill., was run over by a pit-car, and his body paralyzed. He died in forty-eight hours.

Eleven bodies have been found at the works of the Lehigh Portland Cement Co., Allentown, Pa. A mass of limestone weighing thousands of tons caused the trouble.

Charles G. Smith, stockholder and a director of the American Pressed Brick Co., Michigan City, Ind., has filed suit asking judgment for $5,000 and for the appointment of a receiver of the cement brick plant.

Charles Mears, of Mt. Savage, Md., a boss at the fire clay mines of the Union Mining Co., was seriously injured by being caught between two clay cars. He received a broken leg, and ribs, and was badly squeezed.

The Perry (Iowa) Brick & Tile Co.'s plant, valued at $12,000, was sold for $50 for non-payment of their personal taxes, which were overlooked. It is claimed that the Iowa statute makes a sale of personal taxes unredeemable.

While an employe by the name of Townsend was at work at a Geary, Okla., brick yard, he was told to move on account of a charge of dynamite. He moved slowly and the dirt fell upon him, injuring him seriously.

Mrs. William Leafgreen, who has a husband, is suing the estate of La Clede J. Howard, the former president of the Evans & Howard Fire Brick Co., St. Louis, Mo., claiming that she was his wife, being married to him in Decatur, Jan. 15, 1883. She is suing for the widow's share. Mr. Howard died in 1903 and his wife followed a year later, leaving an only son.

POTTERY DEAL FALLS THROUGH.

Wheeling, W. Va., Aug. 15.—It has been stated the plans of the Jackson $40,000,000 pottery combination had fallen flat through the inability to reach an agreement with three big plants at East Liverpool and Sebring, and without them the combination was impossible. This marks but another of a half dozen efforts, made in as many years, to consolidate the potteries, and came the nearest of all succeeding. The only local company to have been in the deal was the three plants of the Wheeling Potteries Company.

The primary trouble, it is said, was in negotiating a deal with the Sebring Bros., controlling four large potteries at Sebring, O., who refused to consider any proposition. Without them and the Homer Laughlin and Knowles, Taylor and Knowles plants at East Liverpool, which were unobtainable on satisfactory terms. The chief trouble seems that the owners of potteries have a decided inclination to sell for nothing but cash, and the proposition to pay $5,000 in cash per kiln and the rest in stock, did not meet with their entire approval.

FIRE! FIRE!! FIRE!!!

The B. W. Miller tile works, near Larue, Ohio, was destroyed by fire. The loss is $10,000; no insurance.

The brick yard of Murrell Dobbins, 23d street and Passyunk avenue, Philadelphia, Pa., suffered a small loss by fire.

The engine, boiler, boiler house and barns of the Bodine & Davis brick works, at Bellows Falls, Vt., was destroyed by fire, causing a $3,000 loss, fully covered by insurance.

The large barns and stables of J. W. McMillan, brick manufacturer, Milledgeville, Ga., were destroyed by fire, causing a large loss.

Fire broke out in the kiln sheds of the brick plant of M. C. Madsen, at Hutchinson, Minn., and they were burned before the blaze could be checked.

The German-American Portland Cement Co.'s plant, at La Salle, Ill., suffered a small loss by fire. Two workmen were overcome by the heat while fighting the flames.

The central portion of the W. S. Dickey Clay Mfg. Co.'s plant, at Kansas City, Mo., was destroyed by fire. The loss is estimated at $50,000. As soon as the insurance is adjusted the buildings will be rebuilt and new machinery put in.

Fire, supposed to have been of incendiary origin, destroyed the plant of the Hillenbrand Brick Mfg. Co., at Louisville, Ky. The loss is estimated at $15,000 with no insurance. Andrew Hillenbrand owned the company.

Fire entirely destroyed the Nevada (Iowa) Brick & Tile Works, owned by S. M. McHose. The loss is $12,000, with only a minimum amount of insurance. Spontaneous combustion in a pile of rubbish was the cause. Plant will be rebuilt at once.

OBITUARY.

David Chapman, one of the best known men in York county, Toronto, Ontario, and a brick manufacturer, was killed in his yard by falling into the pug mill and being crushed and cut to death. He was a great sportsman and a very progressive citizen.

Irving Hand, the young brick manufacturer of Plainfield, N. J., died of malignant diphtheria, at the home of his parents on Berkeley avenue. He was only 24 years old and half owner in the large works at North Plainfield and the manager of same.

Edwin Terry, 188 Berkeley place, Brooklyn, N. Y., died of apoplexy at Sault Ste. Marie, Mich., while on a lake tour for his health. He was 76 years old, and was the founder of the Terry Bros. Brick Company, at Kingston, N. Y., also was interested in the steamboat line established to secure better service in placing brick into the New York market.

PAVING BRICK MANUFACTURERS MEET.

The advisory committee of the National Paving Brick Manufacturers Association met at the Great Southern, Columbus, O., Aug. 29th, in regular quarterly session. William P. Blair, of Terre Haute, Ind., is president; W. R. Purington, of Galesburg, Ill., vice-president; C. M. Cook, of Youngstown, O., treasurer; S. M. Duty, of Cleveland, O., secretary of the association.

PRESSED BRICK NOW BEING USED IN ALL LOUISVILLE BUILDINGS.

According to statistics collected by Louisville (Ky.) brick manufacturers, nearly four times as many pressed brick are now being used for the construction of new buildings in the city than ever before, and within two years it is believed that all buildings of any considerable size will be built either of shapely pressed brick or stone. Such conditions, it is claimed, are a result of the activity of Louisville business men and Louisville capital, which combination has succeeded in manufacturing pressed brick in the city at a little more than half the cost of imported brick and at about 25 per cent. less than they can be manufactured in other cities.

Plans and specifications for Louisville buildings, which are to be constructed during the coming year, all call for pressed brick in some portion of the structure. The majority will be trimmed or faced with stone of some variety or other, but the chief portion of the buildings will be of pressed brick. Heretofore it has been impossible for Louisville contractors to get good pressed brick at less than $20 per 1,000, and more often the price reached $27. These brick were shipped from Ohio or St. Louis, which were the nearest manufacturing points. For this reason few pressed brick were used except in the fronts of buildings and the sides and unexposed portions were constructed of the "rough" variety.

During the last three years, however, several brick manufacturing firms have originated in the city, which have reduced the price of pressed brick to such a sum that it is possible to construct almost any sort of building out of the attractive material and not increase the cost to any considerable extent. Louisville manufacturers are now turning out pressed brick at about $15 per 1,000. This quality of pressed brick is the finest that can be had anywhere and the lower grades are being sold at $8 and $9 per 1,000. Such changes in price within three years had made the changes in construction possible. At the rates being charged an entire building can be constructed of pressed brick at about one-third less than a building could be faced with the material two or three years ago. The changes assure added charm to the architectural beauty of Louisville buildings.

SAND BRICK LOCATIONS.

The newly established Industrial Department of The North-Western Line is calling attention to the many natural advantages that exist along its road for the manufacture of brick and tile. They find in their investigation that the new process for the manufacture of brick by the use of a suitable quality of same has brought to notice several fine deposits of this material at widely separated points on its system. This presents additional opportunities to those concerned in the manufacture of brick and opens a wide field from which a choice of location can be made and good surrounding markets obtained.

Messrs. E. T. and Irving Hand, Plainfield, New Jersey, are running successfully a new "Martin" equipment of handling and drying soft mud brick.

M'ARTHUR BRICK WORKS PROGRESSING RAPIDLY.

The work at the McArthur, Ohio, brick plant is progressing rapidly and while the work heretofore done has been mostly under ground it will from now on begin to show up above the surface. The foundations for the machinery are being put in and are all of concrete. The work throughout, under the supervision of Geo. W. Ogan, is being done in a substantial and workmanlike manner. The company was very fortunate in the selection of a location, the lay of the land being especially adapted to the business besides being underlaid with the finest of clays and shales, a 3 foot 10 inch vein of coal as good as can be found anywhere and of which several car loads have already been mined, a sand bank from which all the sand needed for the construction of the walls, stacks, foundations, etc., is being used, plenty of timber which is utilized for trestles and ties for the tramway, and coal banks, all of which will make a saving of thousands of dollars in the construction and running of the plant. The machinery, engines, steam shovel, cars and rails have all been purchased and some of the machinery ordered shipped and ere the snow flies, unless something unforeseen happens, McArthur will have an industry in operation that the people have long and anxiously hoped for and which will be a benefit to the town and county, and a lasting tribute to the energy, push and public spirit of its promoters.

THE PERFECT CLAY SCREEN.

Catalogue No. 5 of the Perfect Clay Screen, has been issued by its manufacturers, the Dunlap Manufacturing Company, of Bloomington, Illinois. The screen is generally built in three sizes, but any size can be built to order.

The object of having a mechanical device for screening clay is to enable the user to increase quantity and at the same time improve quality. In this we can say that The Perfect Clay Screen can fill all requirements, as it is constructed from ideas brought about by experience and in practical form, as can be seen by the many illustrations in Catalogue No. 5.

If you are having trouble with your screens or wish to make a finer product, a letter to the above address will bring you good information.

NORMAL RATES RESTORED TO ALL LINES.

Normal rates have been restored by all lines between Chicago, Buffalo, New York, Boston and other eastern points, and the Nickel Plate road is still prepared to furnish strictly firstclass service between Chicago and the East, in their three daily through trains to New York and Boston, at rates as low as obtained by any other line. Meals served as you like, in the dining car, either a la carte, club or table de hote, but in no case will a meal cost more than one dollar. Our rates will be of interest to you, and information cheerfully given by calling at No. 111 Adams street, addressing John Y. Calahan, general agent, No. 113 Adams street, room 298, Chicago, or 'phoning Central 2057.

MAGNASITE COMPANY PREPARES TO MANUFACTURE BRICK.

Within another month it is expected that Oakland's, Cal., new industry—the plant of the American Magnasite Company—will be in full operation. This particular plant is to manufacture brick and is one of several industries which this company will eventually establish on this side of the bay.

The buildings are located on the waterfront directly opposite Clinton station, which is the first stop on the Southern Pacific Broad Gauge going east from the depot at Broadway and Seventh streets.

There are to be five buildings, three of which are practically completed. They are substantial structures, being built of iron and Carnegie brick, with galvanized iron roofs.

The engine and dryers are in the main building. Much of the machinery has already arrived. Two big dynamos are being put in position, as well as a three hundred horse power boiler.

Four kilns are being constructed and about two hundred feet from the main building men are busy erecting a gigantic steel tank with a capacity of eight thousand barrels of crude oil.

The company expect to employ from thirty to fifty hands at the outset and later on as many as a hundred men will be given employment.

FURNACE SLAG TO BECOME CEMENT.

The Niagara Cement Company has been incorporated as shown by papers filed with the County Clerk, at Buffalo, N. Y. The company will manufacture and sell Portland cement and is capitalized at $150,000, of which $100,000 is paid up. The directors are William B. Ruggles, Bayonne, N. J.; William B. Reading, East Aurora, N. Y.; John P. Seymour, New York City; Franklin D. Richards, Cleveland, O. It is said that the company has a process of making cement from furnace slag.

WESTERN POTTERY TRUST IS FORMED.

An immense pottery trust, which will control the pottery trade of the country west of the Mississippi river, and the headquarters of which will be located in Denver, Colo., has been launched by the incorporation of the Western Pottery Manufacturing Company.

Capitalized at $250,000, the new organization will take over the Queen City Pottery Works, in North Denver, and the Denver China and Pottery Company, in West Denver. Negotiations will also be made for the Denver Stoneware Company, the only other pottery concern in the city.

Over $100,000 will be spent in enlarging the plants acquired. It is the intention of the incorporators, all of whom are Denver business men, to increase the capacity of the plants until they can supply the entire Western country. Later it is contemplated to make inroads in the Oriental trade.

Merritt W. Gano, who is the head of the new undertaking, will act as manager of the concern. The others interested with Mr. Gano and who will form the board of directors are Frank R. Ashley, George W. Gano, George E. Crawford and Gerald Hughes.

POTTERS AND TILE WORKERS ENJOY ANNUAL OUTING.

The employes of the Weller potteries and the Mosaic Tile company enjoyed their annual outings at Zanesville, O. The tile workers and a large number of their friends went to Olentangy park, Columbus, while the pottery employes spent the day at Indianola park, another of the Capital City's popular pleasure resorts.

The tile workers and a goodly number of the potters and their friends went to Columbus over the Z. & W. railway. Two special trains were provided for the excursionists. The first train of six coaches departed from this city at 7 o'clock and fifteen minutes later the second section composed of ten day coaches departed. The total number of passengers carried was four hundred and eighty-five.

O. L. Gorham, division freight and ticket agent, and W. F. Elrod had charge of the excursion party. The tickets sold here bore coupons which entitled the holders to admission to Olentangy park, the park theater and all amusement features at the resort. The trains were scheduled to arrive in Columbus at 9 and 9:15 o'clock. The return trip was made Saturday evening, leaving Columbus at 6 and 6:15 o'clock and arriving here at 8 and 8:15.

One thousand people journeyed to Columbus over the C., N. & Z. interurban line. Five special cars departed from this city at 6 o'clock, all well filled, and at 7:30 o'clock five more cars pulled out from the depot. The cars were scheduled to make the run to Columbus in two hours.

The crowd carried by the interurban was composed chiefly of the employees of the Weller potteries and their friends. The tickets sold had coupons attached which admitted the holder to Indianola park and entitled him to all the amusements there.

In addition to those carried on the special cars a large number of Zanesville people went to Columbus later in the day on the regular cars.

Employes from several of the potteries not interested in the excursions took advantage of the opportunity and joined the merry makers.

POWER TRANSMISSION ENGINEERING.

The above is the name or title of the C 7 catalogue of the Dodge Manufacturing Company, of Mishawaka, Indiana, owners of the Dodge System of Rope Transmission.

The book contains 416 pages and has been made for the express purpose of furnishing all those interested in power transmission equipment with the most up-to-date and dependable data that can be compiled, making it a veritable text-book on this subject.

If you are considering anything about power transmission, it might be well to look over No. C 7 catalogue, which you can have for the asking.

The Indiana Drain Tile Co., Brooklyn, Ind., which began to build their large drain tile plant in March, now have same ready to start and will soon be ready to supply the demands for tile.

SAND OR LIME-BRICK OR BLOCK NEWS.

Contractor Minton is making cement brick at Eaton, Ohio.

G. S. Nobles, Flora, Miss., is in the market for cement brick and hollow block machinery.

A new and complete factory for the making of cement brick will be installed by the Chapman Construction Co., Herrin, Ill., in the spring.

J. E. Dalby, of Webster City, Iowa, has invented a machine for the manufacture of drain tile out of sand and cement.

The Holland (Mich.) Brick Co. are turning out 16,000 sand-lime brick daily. They recently received an order for 640,000 brick for a large factory in that city.

A drain tile factory is to be established in Fairmont, Minn., if the clay being tested turns out to be what is expected.

Samuel J. Scott has filed suit against the directors of the Sharp Sand Brick Co., Columbus, O., and the Sugar Grove Brick Co., to stop them from selling and buying the plant.

A company has been organized at Greenfield, Ind., with Ernest Dobbins as president, to establish a plant for the manufacture of brick from lime and sand.

The Laketon (Ind.) Sand Brick Co., recently located there through the efforts of the Industrial Department of the Erie Railway, will soon be in operation.

Ed. D. Steger and other North Texas parties have withdrawn from the Houston White Brick Co., leaving Houston and Galveston parties in full charge.

The Helm Brick Machine Co., Traverse City, Mich., have placed one of their cement brick machines in the State Penitentiary at Bismarck, N. Dak.

The Manitoba Pressed Brick Co., Beausejour, Man., are now making sand-lime brick. G. H. Bradbury is the manager and the "Berg System," of Toronto, Ontario, is used.

The United States Brick Corporation has been incorporated at Washington, D. C., with $40,000 capital stock. They are building a plant at Michigan City, Ind., where Geo. W. Bostick is in charge. The National System is being used.

The Canada Sand-Lime & Pressed Brick Co., Toronto Junction, Ont., has been incorporated with $60,000 capital stock. W. M. Flavelle, John Carew and Robert Kennedy, of Lindsay, are interested.

The Schenectady (N. Y.) Brick Co. recently elected the following officers: Senator Edgar T. Brackett, of Saratoga, president; Judge Harry V. Borst, of Amsterdam, vice-president; Louis M. King, secretary and treasurer. The company is capitalized at $100,000.

The Columbus Granite Brick Co. have bought land at Plain City, O., and ordered machinery for their plant. The following officers have been elected: O. P. Lenox, of Richwood, president; O. W. White, Plain City, vice-president; J. E. Robinson, Columbus, secretary and manager; Col. W. L. Curry, treasurer. Capital stock $40,000.

MISCELLANEOUS ITEMS.

An immense brick yard is being built at Lynn, Ind.

The Hand Made Brick Co., Mandan, N. Dak., are burning brick.

The National Cement Brick Co., Boston, Mass., has been organized with $25,000 capital stock, by Geo. M. Faulkner, president, and Thos. J. Toner, treasurer.

The plant of the Brazil Clay Co., Brazil, Ind., is going up very rapidly. Six kilns are already completed and the machinery is being installed.

L. C. Beasley, Council Bluffs, Iowa, will at an early date enlarge his brick plant in the east part of the city and will add machinery for pressed brick.

The Hancock Brick & Tile Co., Findlay, Ohio, has been incorporated with $35,000 capital stock by D. E. Child, J. A. Gibson, Roy Child and A. G. Fuller.

The machinery for the Smith & Spencer new brick plant at Portsmouth, Ohio, has arrived and brick will be made in 60 days.

Denis Stapleton, What Cheer, Iowa, is putting in a "Smith" new triple down draft furnace in his brick and tile factory.

The Cleveland Brick Co.'s plant at Canton, O., one of the Davis concerns, is being inspected by out-of-town capitalists with a view of purchase. Attorney C. C. Bow is the trustee in bankruptcy.

The Sapulpa (Ind. Ter.) Pressed Brick Company were made happy by the turning on of gas by the oil and gas company so that they now have 100 pounds pressure gas to burn their brick and will discontinue using coal and wood.

T. B. Craycroft was unable to make arrangements for a site on the Richmond belt line, and has contracted for same at South San Francisco, Cal. He also makes brick at Visalia, Cal.

The Red River Valley Brick Co., Winnepeg, Manitoba, is the most recent Winnepeg industry. They will install a plant on 50 acres just north of the Exhibition grounds, and William Styles will manage it.

The Northern Pressed Brick Co., Crookston, Minn., capital stock $25,000, has been incorporated by J. R. Martin and P. A. Brooks, of Minneapolis; H. E. Nesne, A. A. Buckingham and J. A. McDonald of Crookston.

The Ohio Coal & Sewer Pipe Co., Niles, O., has made application for the listing of $150,000 bonds on the Pittsburg Stock Exchange. O. W. Diehl is the president of the company.

The New Era Gas Engine, made at Dayton, Ohio, is meeting with great success in price yards throughout the states. Read what one of their users says on page 51 of the CLAY RECORD.

Messrs. Washburn Bros. Company, Glasco, New York, have now in full operation the "Martin" System of handling and drying 100,000 soft mud brick daily, which system was installed by the Henry Martin Brick Machine Manufacturing Co., of Lancaster, Pa.

J. M. Reaves and R. D. Bradley, Merrellton, Ala., are burning brick at that place.

The Clarion (Pa.) Fire Brick Co. intend to greatly improve their plant by adding several new improvements, etc.

The Donnelly Brick Co., New Britain, Ct., has bought 17 acres of clay land from the Royal Robbins estate.

Oil has been found on the property of the Gurdon (Ark.) Brick Company.

The Cambridge (Ohio) Clay Product Co. has been incorporated by M. C. Campbell, W. A. Scott, E. G. Larrick and Freeman T. Eagleson.

Geo. W. Danskin has sold his interest in the Danskin & Wagner brick works at Marengo, Iowa, to John A. Meyers, possession to be given January 1st.

Citizens living near the Berg & Oxby Brick Works, on Cleveland street, Los Angeles, Cal., have gone before the city council with a nuisance petition against the plant.

Ground was broken Aug. 2nd at Estacada, Oregon, for the plant of the Estacada Brick & Tile Company. E. C. Belknap is the manager of the enterprise.

The brick yard of Antonio Poutrie, near the Van Woert public dumps, Albany, N. Y., has been sold to M. V. B. Wagner, who will continue the business.

Superintendent Bemner of the Industrial School, Benson, Arizona, has started the second brick machine to work and the cadets are now making a good quality of brick.

The Colorado Brick Supply Co., Denver Colo., has been incorporated with $10,000 capital stock by Oscar D. Cass, Herold Dinsmore and Jos. Samson.

The Slater Brick Co., of Billings, Mont., has closed a contract with the Northern Pacific Ry. for 1,000,000 brick, to be used at Mandan, N. Dak.

S. H. Davis, of Davis, I. T., has just closed an option on a tract of land adjoining town which will be used for a large brick and tile factory. The parties are from Chicago.

Tom Knudson, Roosevelt, Minn., has found a fine bed of clay on his property and has fully tested same, with a view of establishing a small plant.

The Hobson Brick Works, Wenatchee, Wash., has been taken to Odessa by Mr. Hobson, where he has a large brick contract. The moving of the plant was less expensive than the freight on the brick.

The Potlatch Lumber Co. has let the contract to J. T. Gamble, of Spokane, Wash., to furnish 1,500,000 brick to be used in building the big mills. He will make the brick on the ground as a fine clay has been found.

So great is the building activity at Spokane, Wash., that the Washington Brick & Lime Co. will increase the capacity of their Clayton plant 50,000 brick per day. The new plant will make only common brick.

Plans are under way for the reorganization of the Volant (Pa.) Clay Mfg. Co., a $100,000 corporation, the plant and real estate of which have been sold by E. P. Norris, of Braddock, trustee in bankruptcy. The plant was bid in by W. S. Rice, representing the stockholders.

Dan Martin, Clio, Ala., has installed machinery for making brick.

Cannon & Hybskmann, Marysville, Kansas, are now making their second kiln of brick. The first one proved very satisfactory.

L. W. Cooper, of Charlotte, N. C., and W. B. Henry, of Wilkesboro, has leased the brick works of Jacob Jenkins, at Stanley, and will double the capacity of the plant.

A large force of men are at work constructing the new brick factory at Maynard, Ind., for the National Brick Company, of Chicago.

The Lenox Brick Co., registered office, Cliffwood, N. J., has been incorporated, with $100,000 capital stock, by Geo. D. Mulligan, William Louden and Lewis J. Angerine.

The Iowa Brick Co., Des Moines, Iowa, are erecting a new dryer at their plant, 75x150 feet, fireproof construction.

T. J. Gilbert, of Ironton, Ohio, will likely develop the clay lands which he owns near Greenup, Ky., on the C. & O. Ry., which is exceedingly rich in clay and shale.

The United Brick Co., Conneaut, O., has been organized to take over the Harper-Norton Shale Brick Co.'s plant, which has been idle for 15 months, and will open it.

James Mock & Co., Hartford City, Ind., have acquired the Rodefer Brick Works, at Elwood, Ind., and will operate it. Muncie men are interested.

Due to over-production, the Marion (Ind.) Brick Co.'s plant in South Marion, has closed down. The company have 8,000,000 brick on hand.

The United States Kaolin & Development Co., Seivern, S. C., with $100,000 capital stock, has purchased to develop 148 acres of kaolin in Aiken county.

The Fifield Bros. Brick Works, at Janesville, Wis., have been leased by a Mr. Fresee for a term of 5 years. The plant is known as the Janesville Red Brick Company.

The St. Mary's (O.) Block & Tile Co. has been incorporated, with $15,000 capital stock, by J. F. Maier, G. F. Boos, Jacob F. Koenig, J. H. Koenig, J. F. Fisher and J. H. Schroeder.

George Drury, of the York (Pa.) Bridge Co., and George Motter, of the York Mfg. Co., have bought 14 acres of clay land of William A. Smyser, three miles west of York, Pa., on the Western Maryland Ry., and will put up another brick plant.

The Willard Bros. Company, Chattanooga, Tenn., have incorporated with $10,000 capital stock. The following are the incorporators: James A. Willard, W. B. Davis, Edwin G. Willard, W. B. Garvin and W. G. Burns. The concern was formerly known as the Willard-Burns Fire Brick Co., and the plant is located at Mission Ridge, Ga.

The brick yards of Hass Bros., at the end of Morris street, Fond du Lac, Wis., have been sold to the Fond du Lac Cement Brick Co., consideration $25,000. The property consists of 116 acres of land and buildings. The new owners operate a dry press plant south of the city, but will change to the new location in the fall.

MIXERS, DRYERS, CONVEYORS AND ELEVATORS

The C. O. Bartlett & Snow Co., Cleveland, Ohio, U. S. A.

BRICK YARD FOR SALE.

Brick Yard for sale cheap. A bargain to the right party. Good market at hand. For further information address

BRICKMAKER,
Care Clay Record, Chicago, Ill.

BRICK PLANT FOR SALE.

Capacity ten to twelve million brick a year. Inexhaustable supply of best quality clay and sand. Railroad switches in plant, first-class machinery, Sharer dryer. Good market for brick. Easy terms and at a price that makes the plant a rare bargain Located on the Erie R. R. We invite correspondence and inspection of the work.

DIAMOND BRICK CO.,
Brandt, Pa

FOR SALE.

Profitable running brick plant, 25,000 capacity. Ready sale for entire product. Owner has larger interests requiring attention

TERRA HAUTE PRESSED BRICK CO.
Terra Haute, Ind.

FOR SALE.

One second-hand Hercules Special Brick Machine, manufactured by Horton Mfg. Co. Capacity 30 to 40 thousand per day. Machine in first-class condition. Located in central Pennsylvania. Address

H, care Clay Record.

FOR SALE.

Iron Quaker Brick Machine, manufactured at Wellington, Ohio. Used but little. Cost about $500. Taken under mortgage and will sell for $150

ANCHOR TRUST CO.,
Wichita, Kansas.

FOR SALE.

For sale, reasonable, in condition—
One 5x18 foot Horizontal Tubular Boiler.
One No. 20A Penfield Hollow Brick Machine.
One 14 foot Pug Mill.
One Disintegrator.
One 40 foot Clay Conveyor, with 20 foot belt.
Forty Fire-proofing Dies, with two extensions, pullys, clutches and belting.
Reasons for sale, are making different ware.

R. 611, W. 51st St.,
New York City.

FOR SALE.

Drain Tile and Brick Plant for sale Good machinery. Good location. Plenty of clay. Price $2300, small payment down, long time on rest. Will take product as pay. Address

CONTINENTAL,
Care Clay Record, Chicago.

FOR SALE.

A 20,000 capacity brick and tile plant, located in good Michigan town. Has Stewart patent kilns, plenty of drying sheds, all machinery in good condition, fine clay, good market, established business. Price very reasonable. Address

MICHIGAN,
Care Clay Record, Chicago, Ill.

Machinery For Sale.

FOR SALE.

50 rack cars for 32 inch pallets, capacity 432 brick; track gauge 24 inches.
Also 55 flat cars for soft mud brick, with foot pallets Track gauge 25 inches.
Both styles of cars in first-class repair.

ATLAS CAR & MFG. CO.
Cleveland, Ohio

GIANT MACHINE FOR SALE.

A second-hand No. 2 Giant Auger Brick Machine. Address "GIANT,"
Care Clay Record, Chicago.

FOR SALE.

Right and left-hand One, Two and Three Way Switches, of various gauges, radius and weight rail, at special prices.

THE ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

FOR SALE—CHEAP—1200 Steel Crimped Pallets. 10x34 inches. Address

ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

FOR SALE—CHEAP—New and re-laying rails, 12, 16, 20 and 25 pound. For prices, address

ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

FOR SALE.

One 4-Mold Dry Press, very cheap. Good as new.

DEALER,
Care Clay Record, Chicago, Ill.

FOR SALE.

100 Single Deck Cars.
3 Transfer Cars.
1 Centrifugal Pump.

O. W. DUNLAP,
Bloomington, Ill.

WANTED.

A brick and tile plant in exchange for a good Iowa or Illinois farm. Address

FARM,
Care Clay Record, Chicago, Ill.

FOR SALE.

Only wire cut shale brick plant in Sharon, Pa. Capacity 25,000 brick daily. Reason for selling, owner busy engaged elsewhere. Town 30,000 inhabitants. Uses more brick than can be made. Address

J. V. ROSE
604 Merchants Exchange Bldg., San Francisco, Cal.

Do Your Brick Turn White?

HERE IS THE REMEDY.

PRECIPITATED

Carbonate K.B. C.F.H. of Barytes

The only preventative for scum and discoloration on facing Brick and Terra Cotta; neutralizing the Sulphate of Lime in the Clay and Water.

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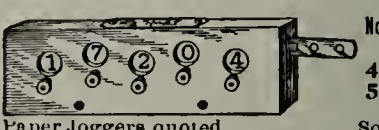

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4 Wheel, $3.00
5 Wheel, $3.25
Guaranteed.
Sold by all dealers

Paper Joggers quoted.
R. A. HART, 41 White St., BATTLE CREEK, MICH.

FOR SALE.

One 12-foot Pug Mill. One American Clay Machinery Co.'s Brick Machine. Raymond Repress. Iron Brick Cars. Pallets. Etc.

BOX 1048, Worcester, Mass.

FOR SALE.

Brick plant in Mississippi town of 5000 population. Plenty of good clay and big demand for brick. Reason for selling owner can't give personal attention. Address

"MISS," care Clay Record,
Chicago, Ill.

WANTED TO BUY.

Second-hand Combination Brick Machine, capacity about 30,000 to 40,000 per day. State price, also where machine can be seen.

Address "CASH BUYER,"
Care Clay Record, Chicago.

ENGINE FOR SALE.

Engine for sale—One 14x18 inch 80-horse power Frost Engine. Only used a short time

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Two 4-mold style "F" American Clay Machinery Co. Dry Presses, in good order. Have made about one million brick. Reason for selling is that clay is not suitable for dry press brick. A bargain for some one.

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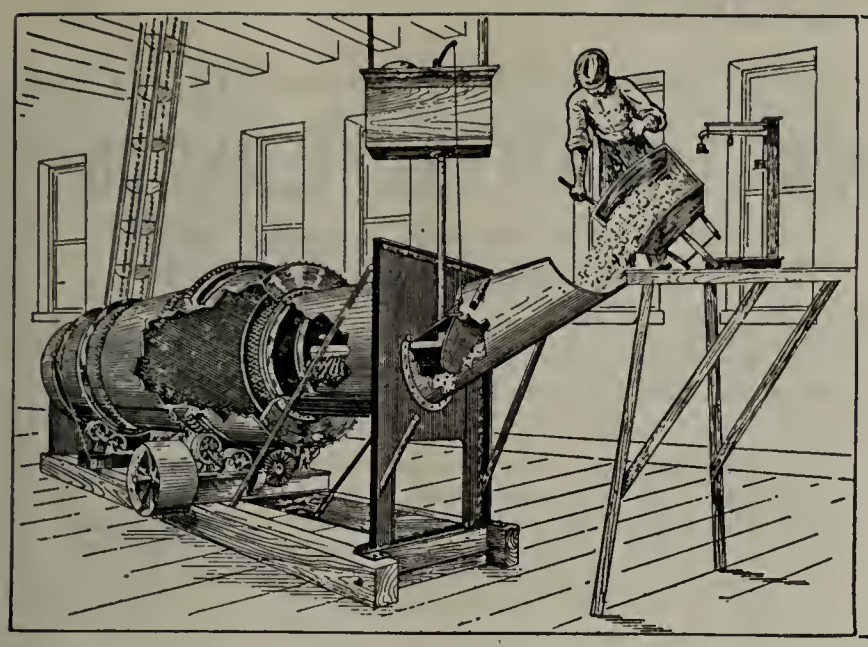

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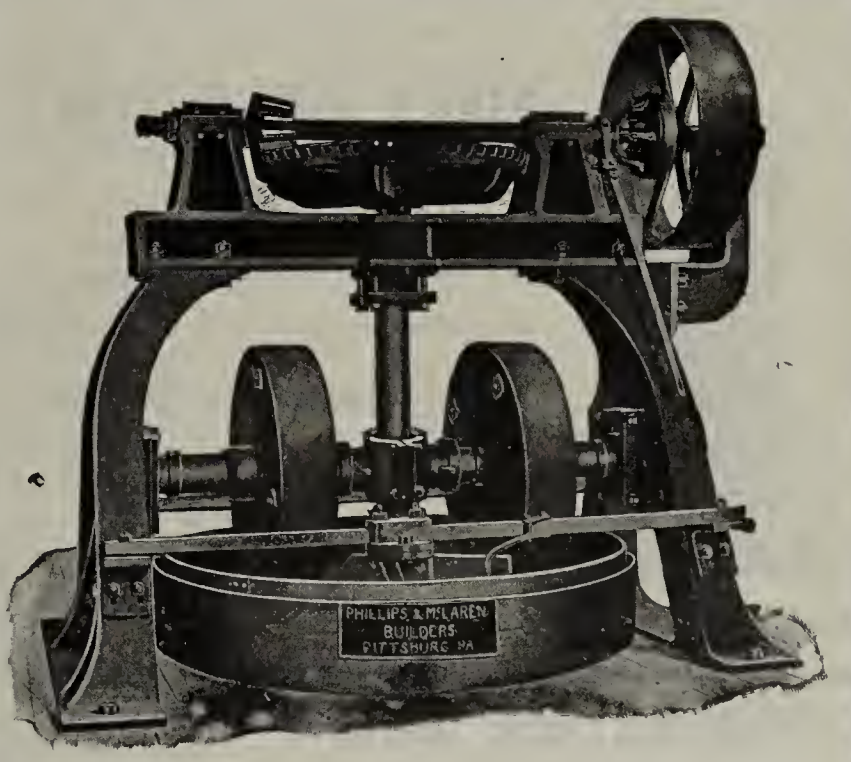

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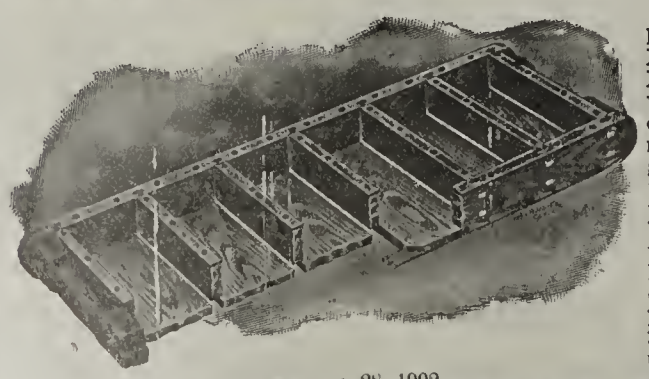

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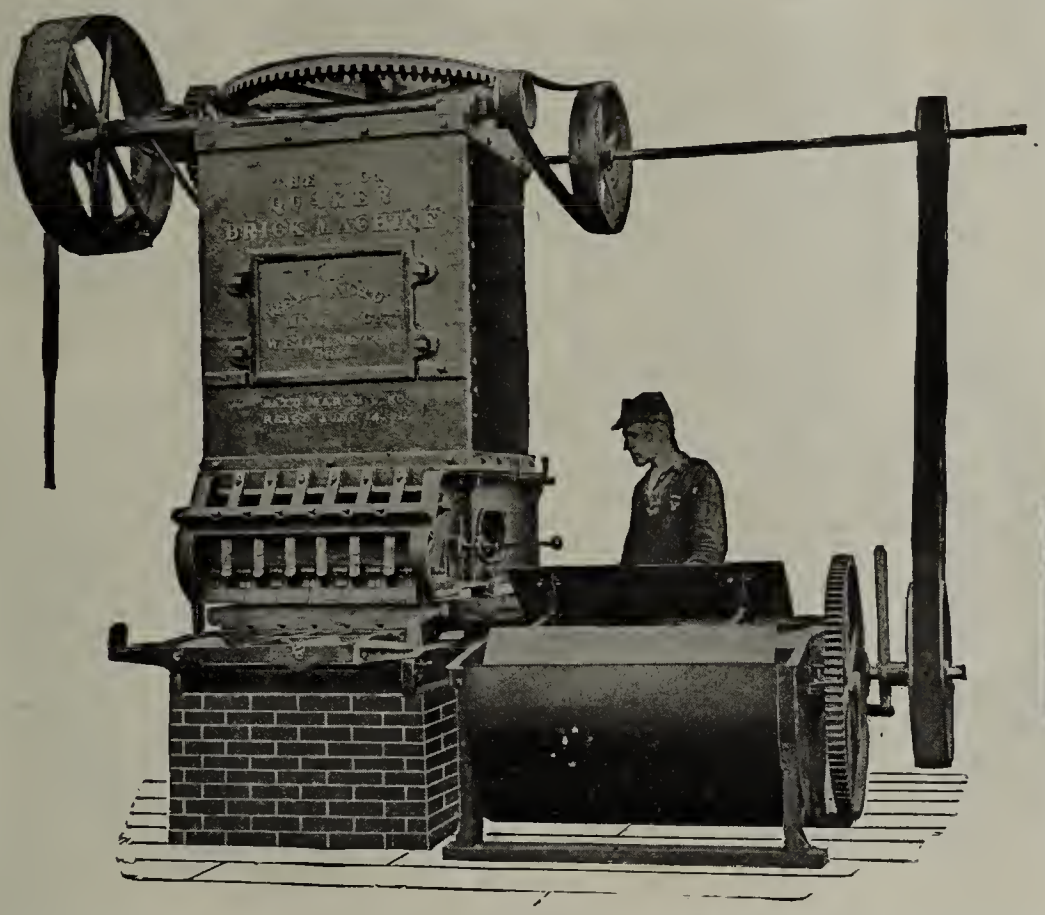

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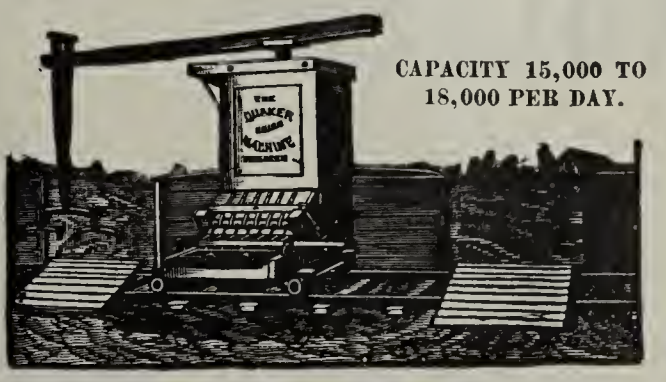

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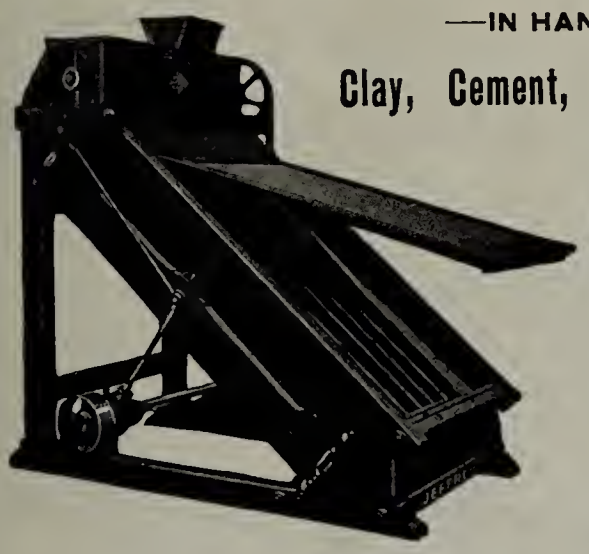

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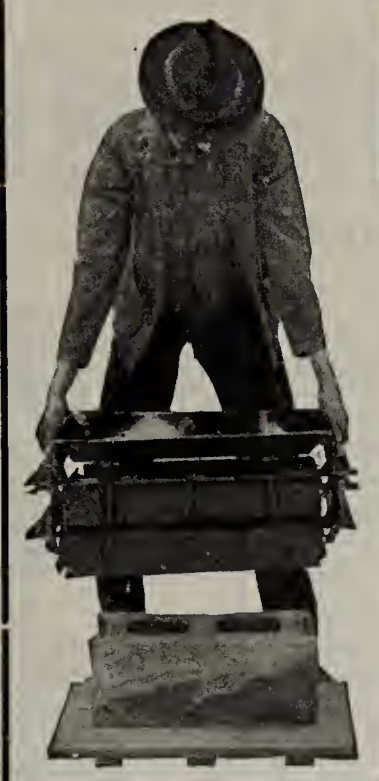

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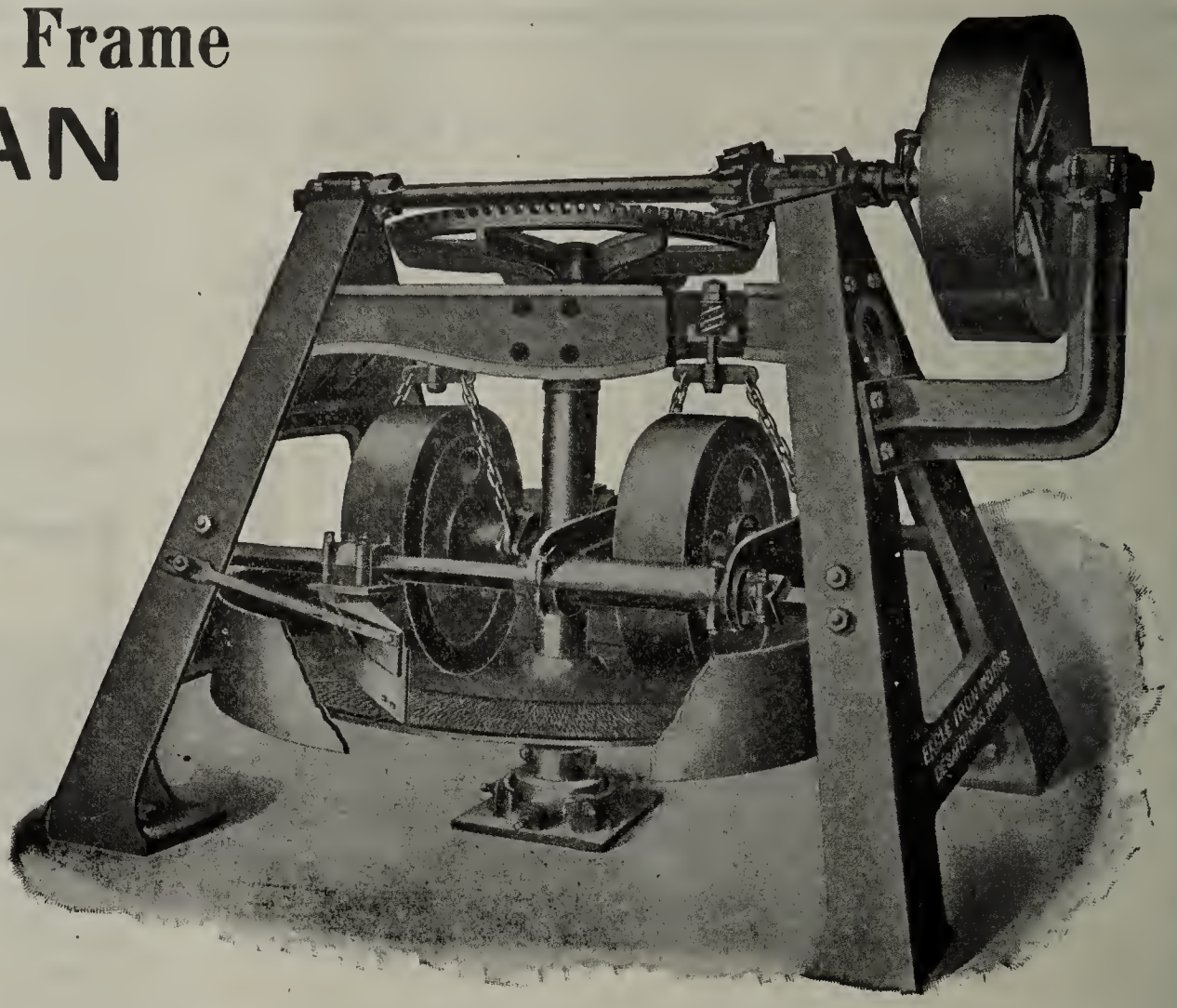

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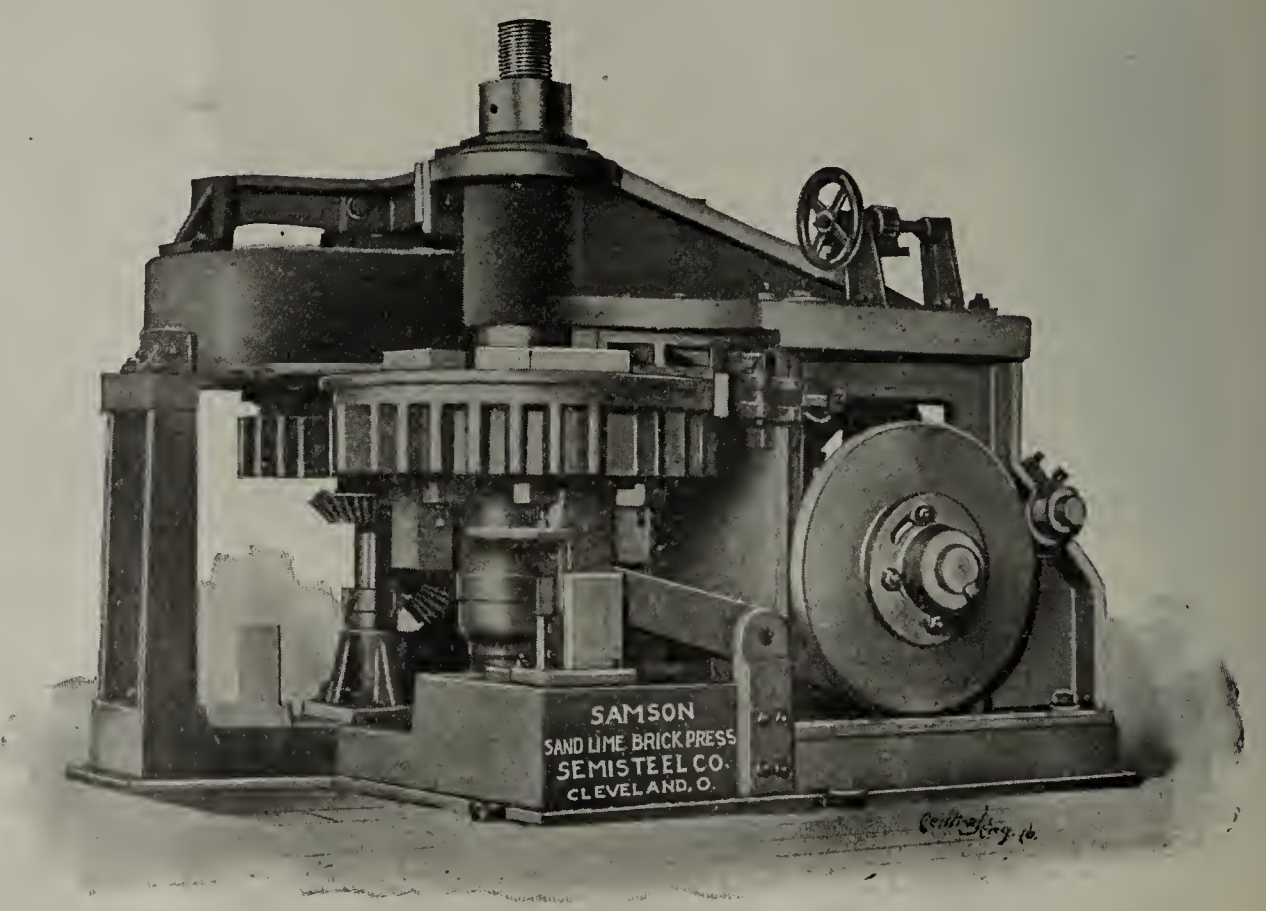

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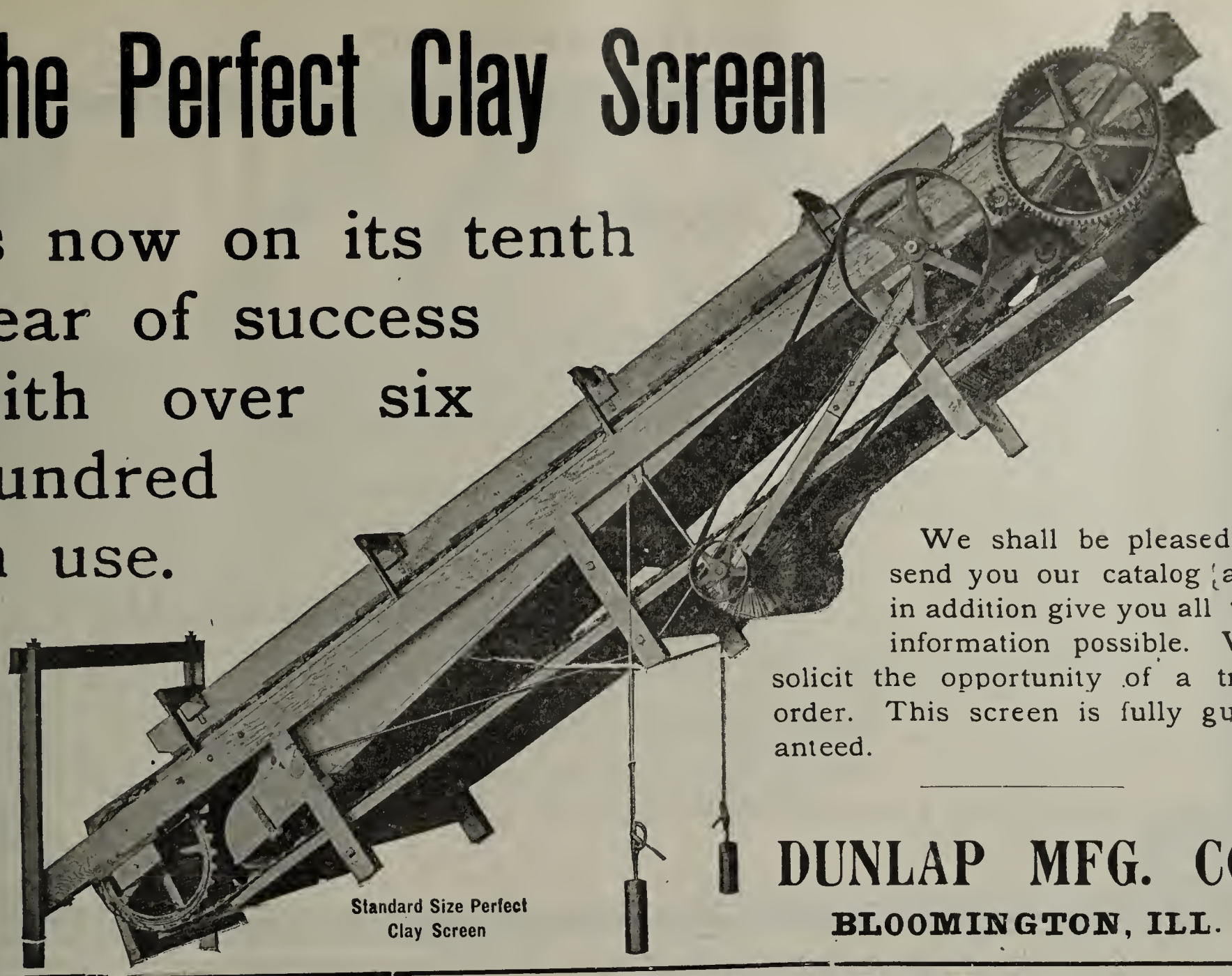

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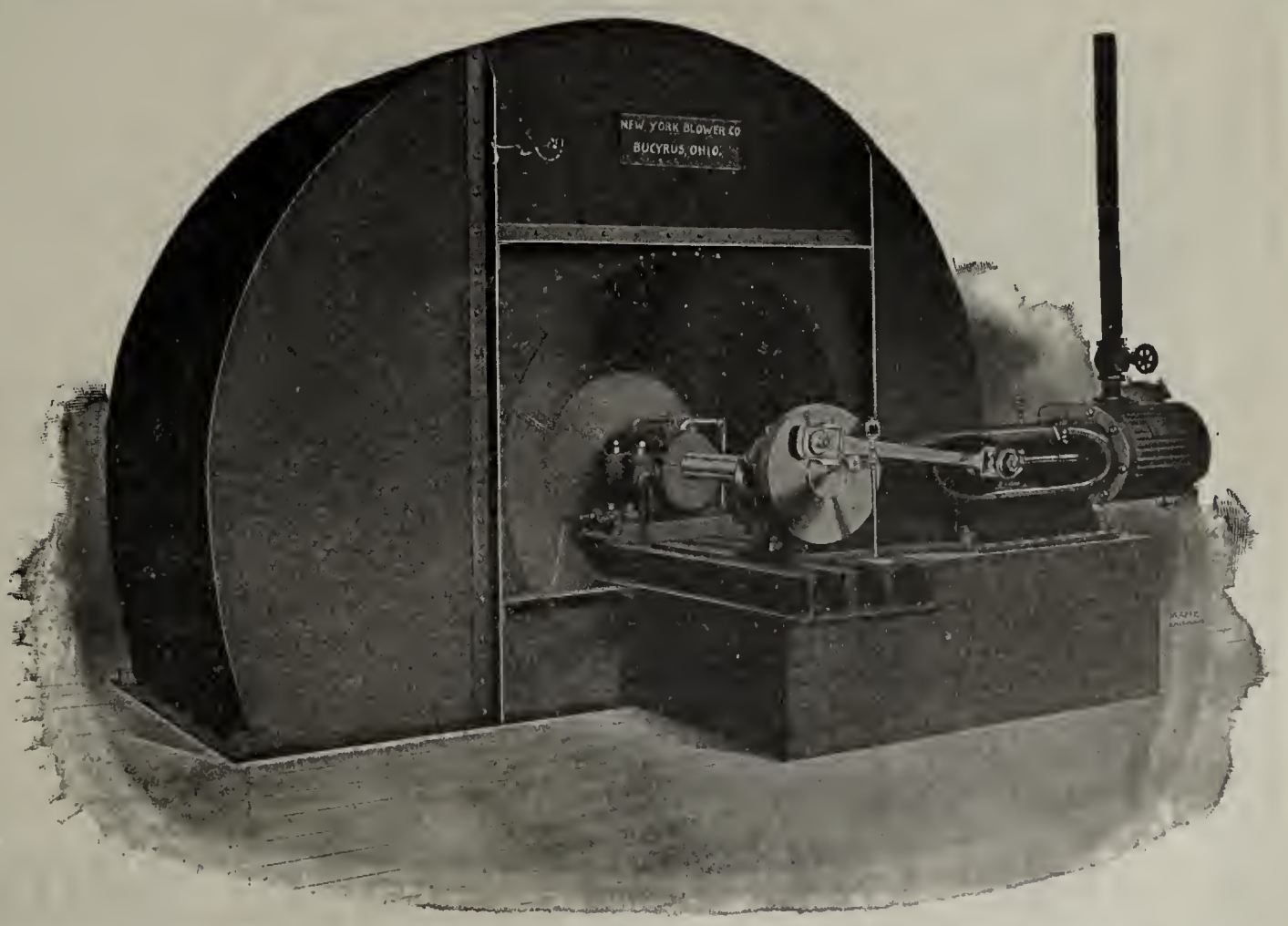
We also furnish fans for forceddraft on kilns, for water smoking, for hot floors. We furnish steam coils for utilizing exhaust steam. Write us.



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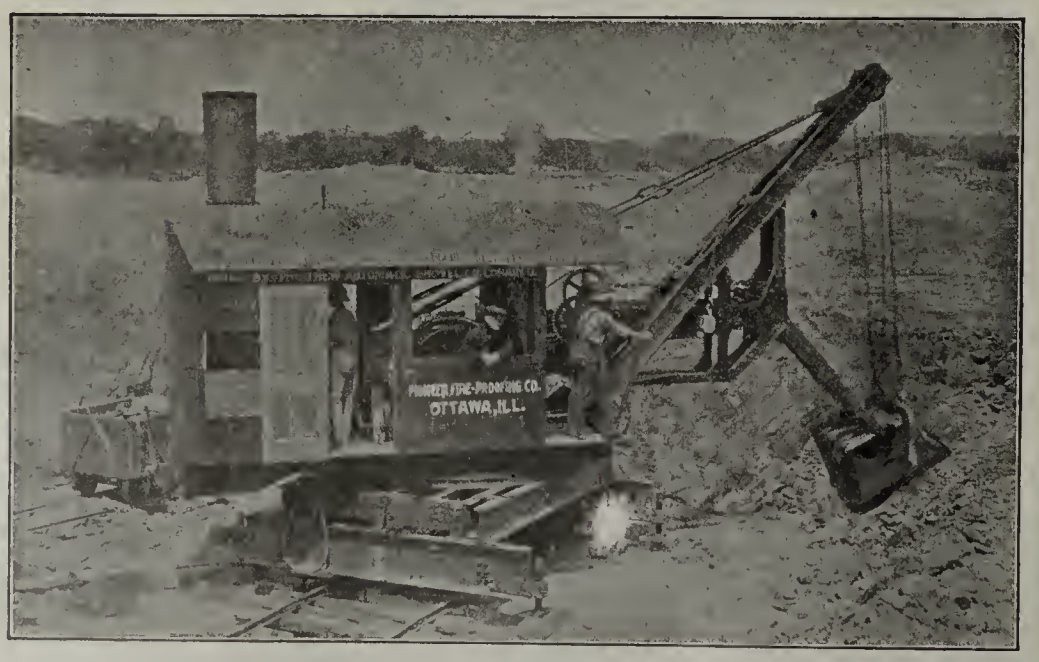
Made In Four Sizes. Mounted on Car Wheels or Traction Wheels.



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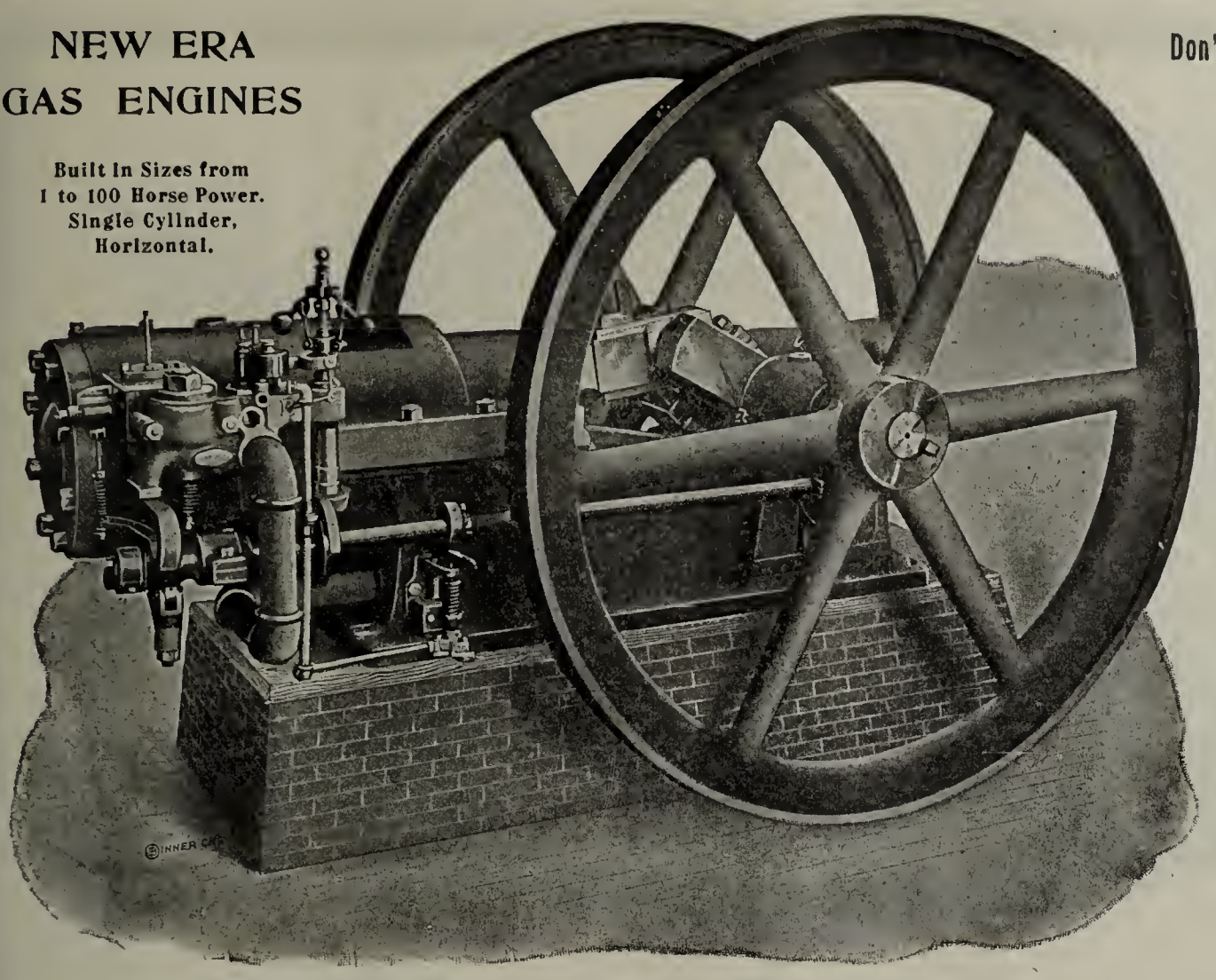

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The New Era Gasoline Engine does the work required of it to my entire satisfaction, and is the best built gasoline engine I ever came in contact with, requiring practically no repairs and little attention, and the man in charge of the engine can earn his wages doing other work.

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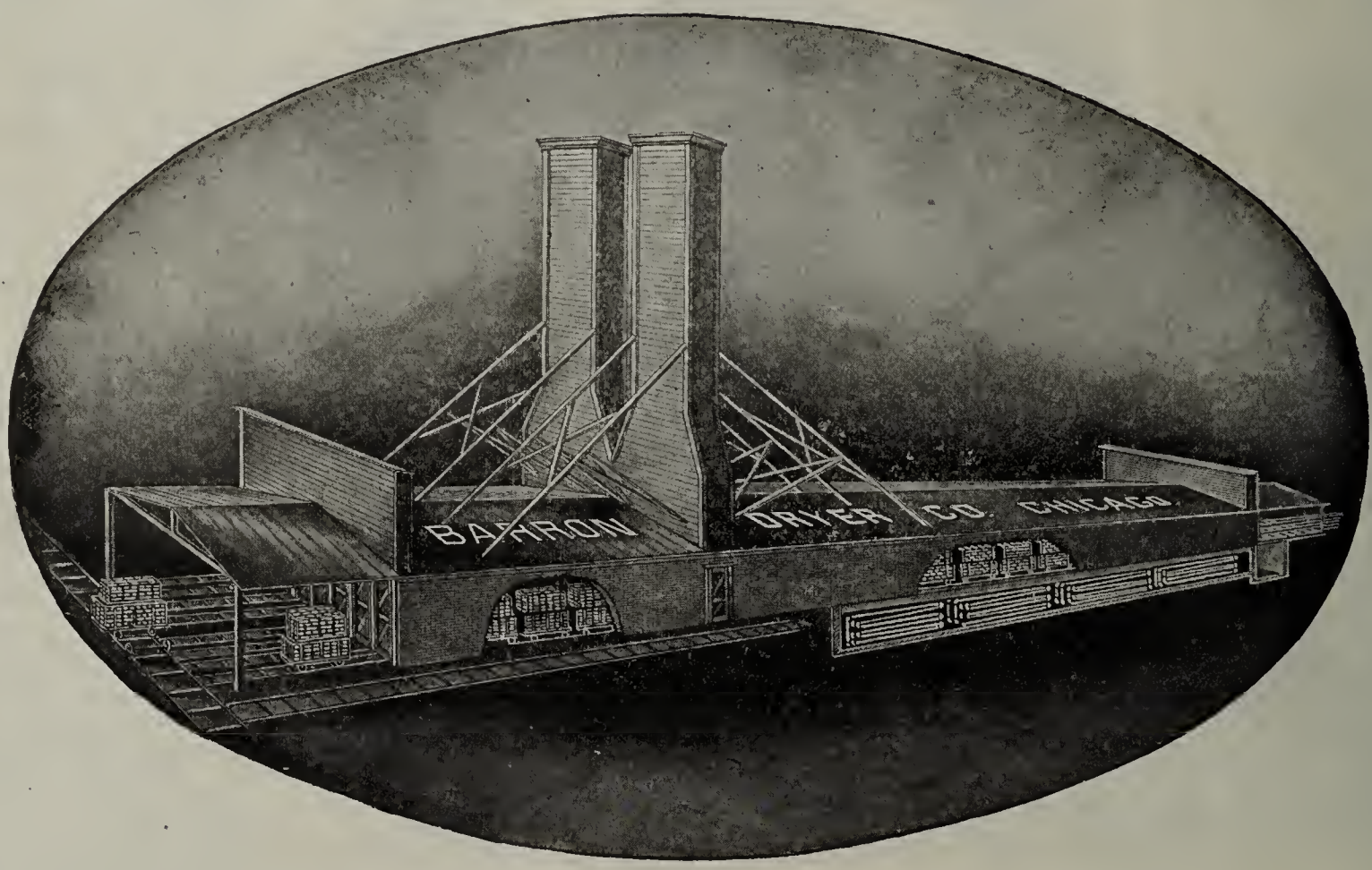

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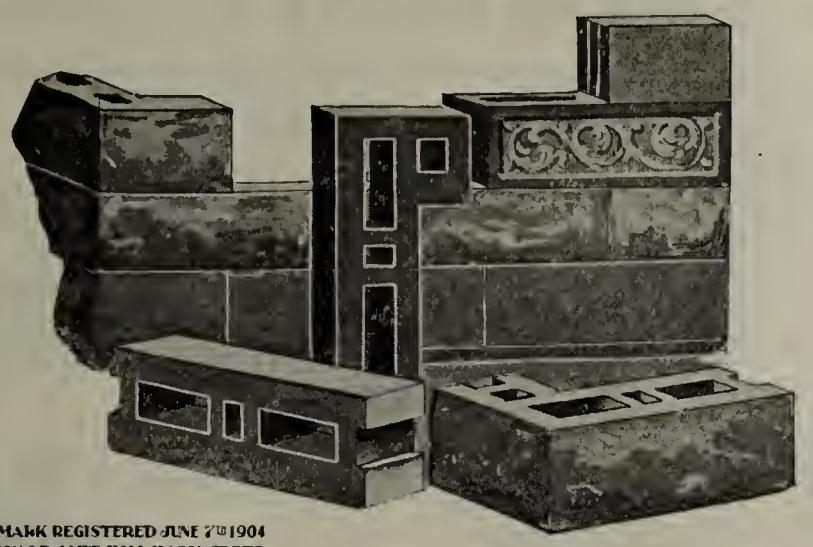

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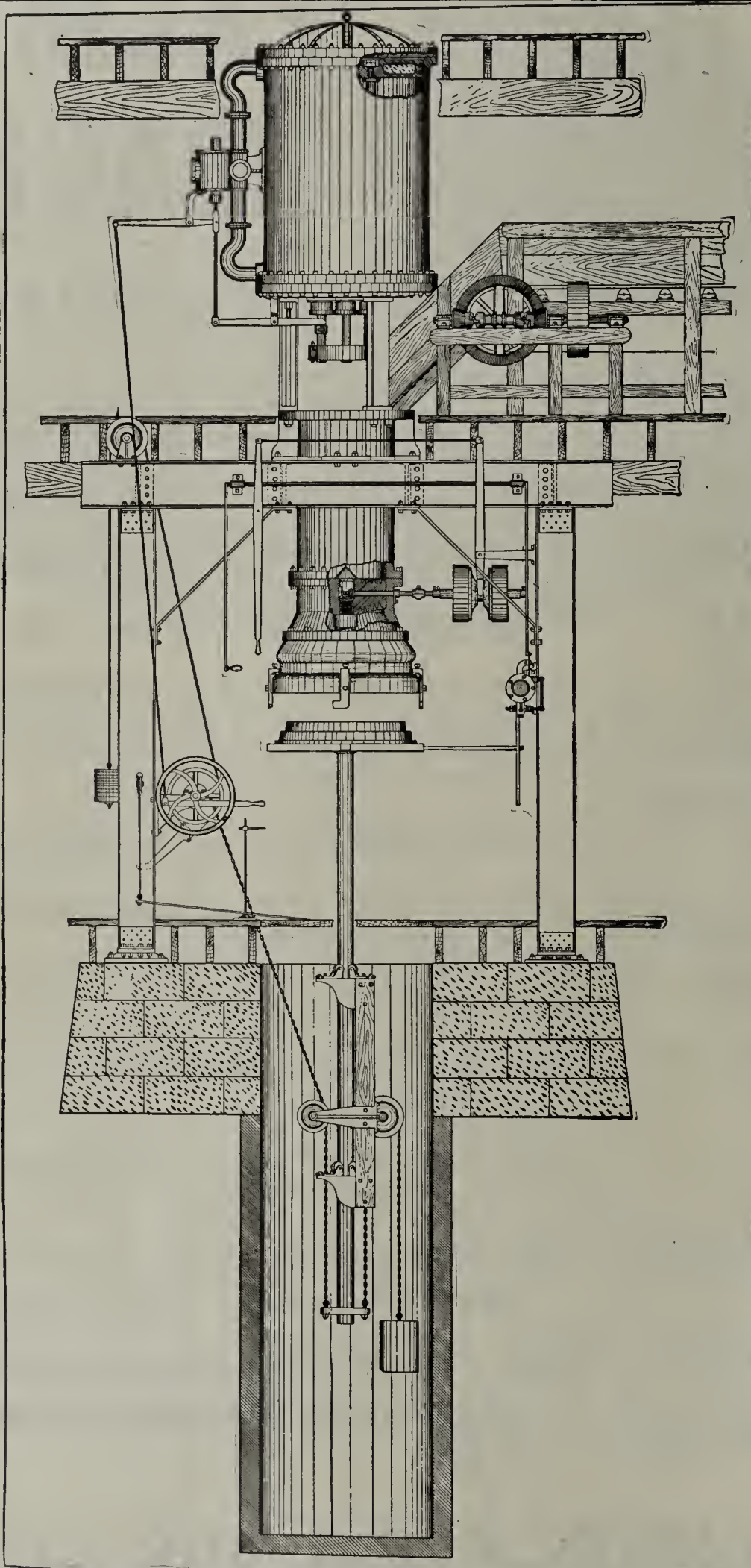

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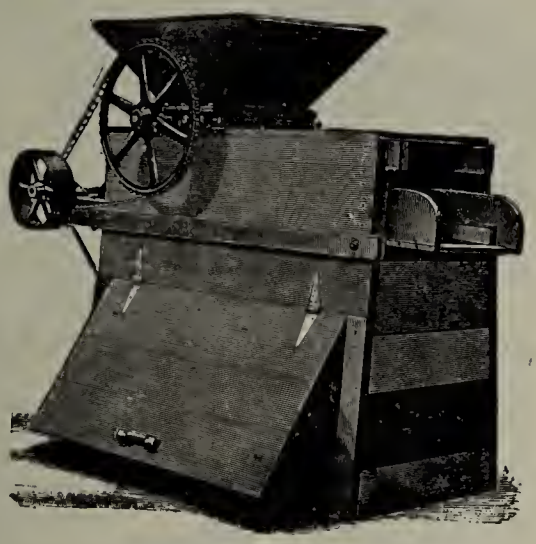

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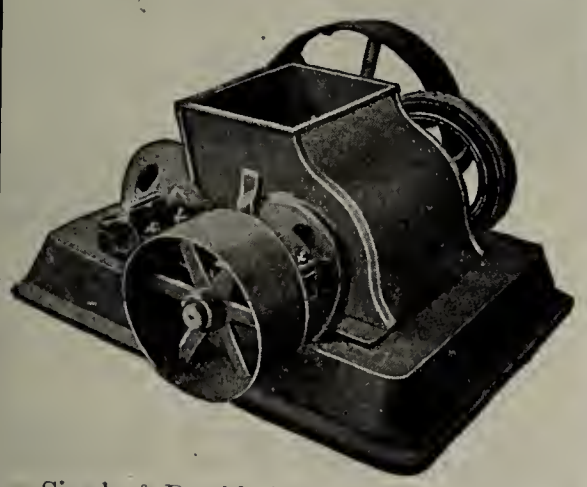

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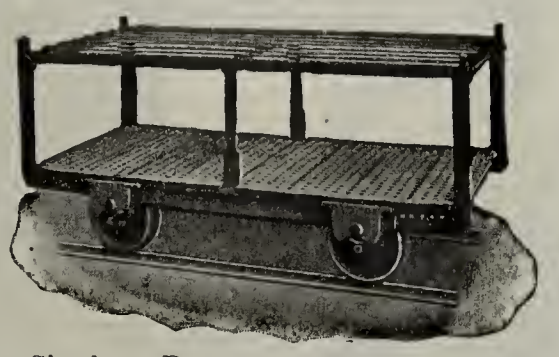

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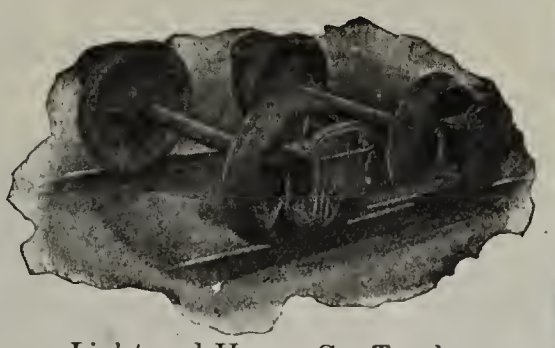

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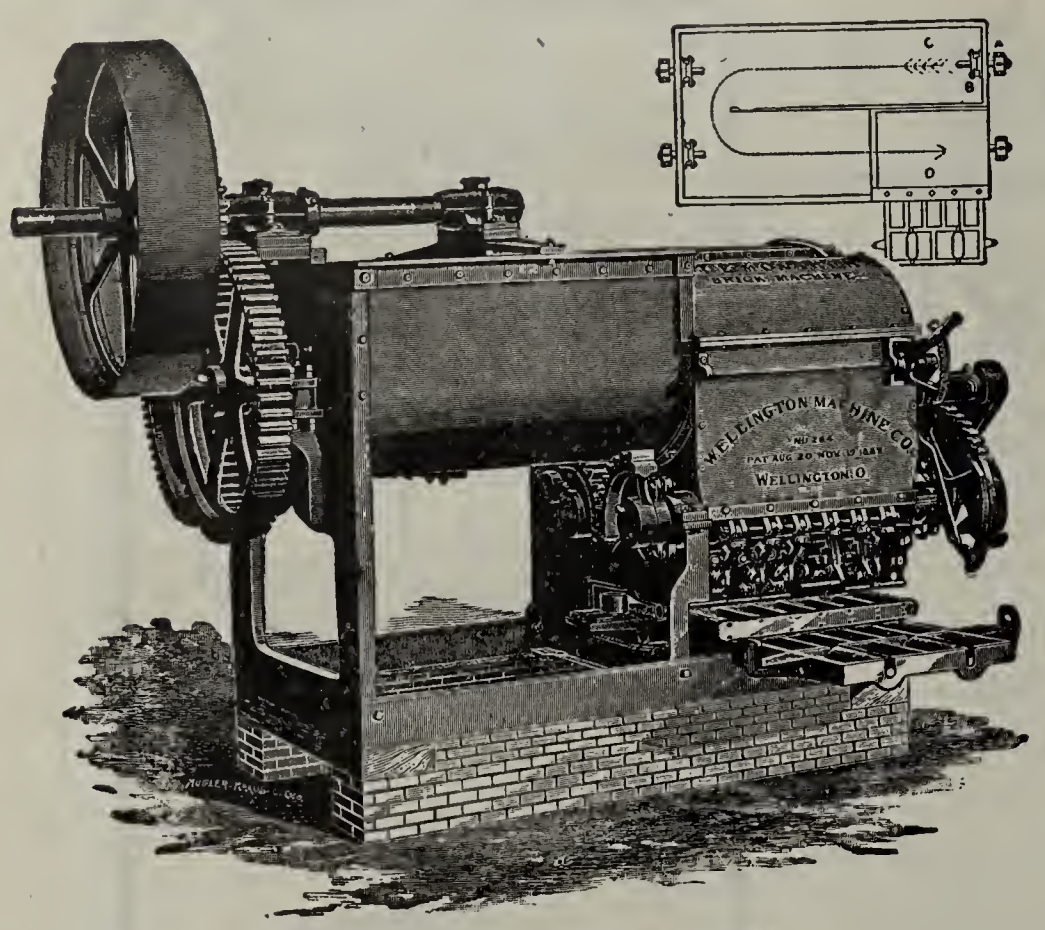

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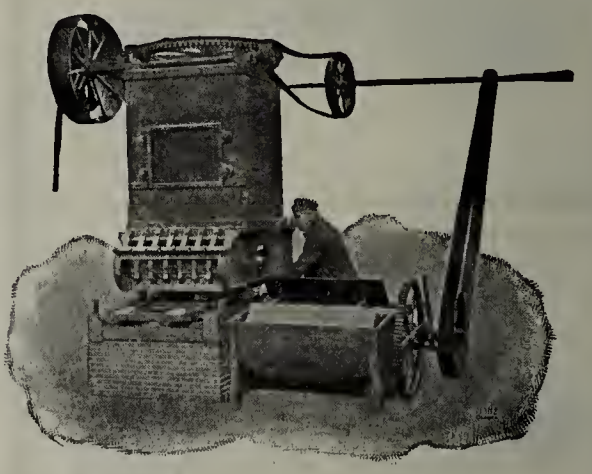

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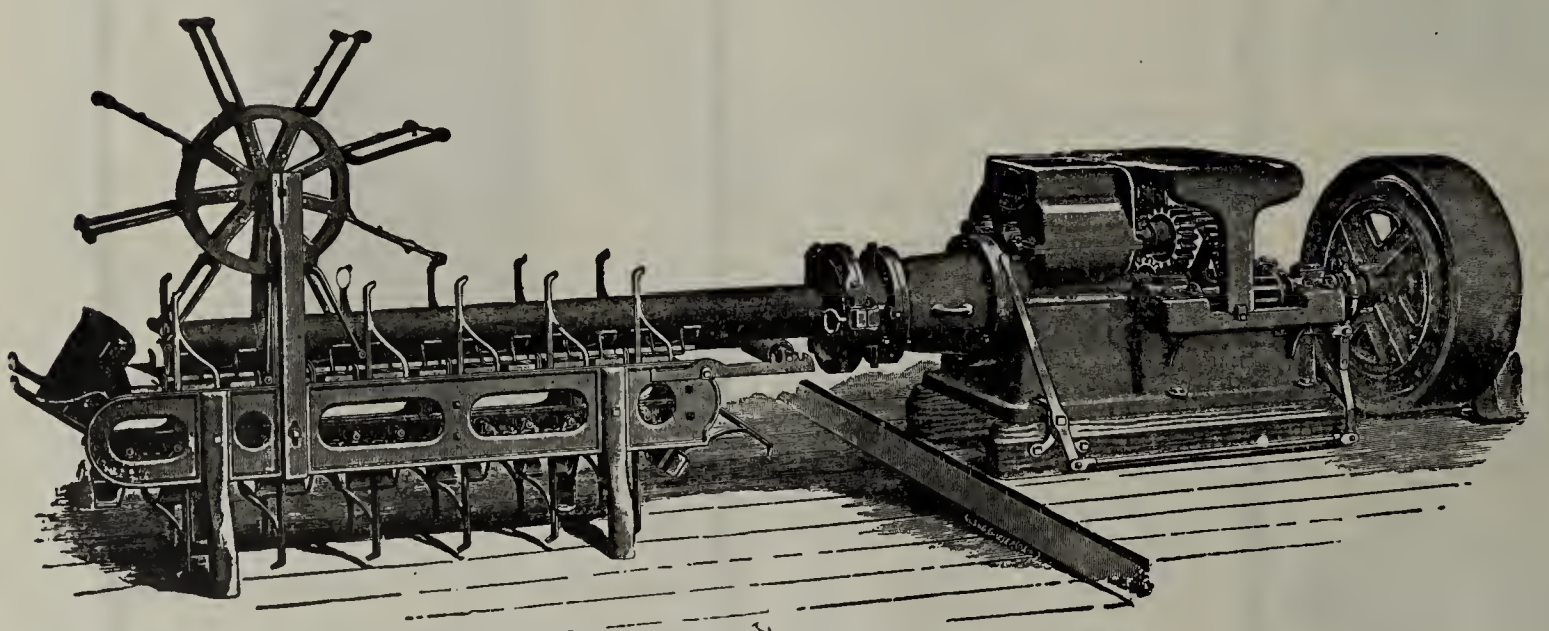

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We have a full line of Clay-Working Machinery, sand mold brick machines, auger brick and tile machines, Automatic side and end cut tables, dies, molds, barrows, trucks, sanders, represses, pug mills. *The only down cut, reel side brick cutter on the market for cutting face brick that do not require repressing.* We can guarantee to make you a better face brick with this cutter than you can get from any other cutter on the market.

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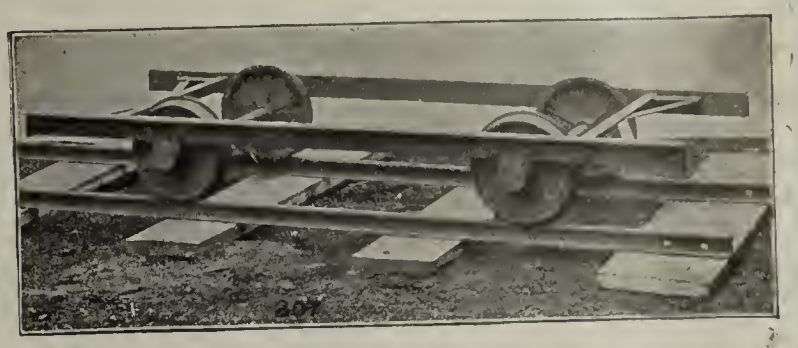

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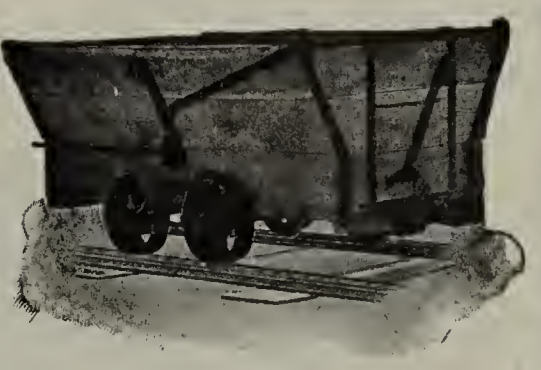

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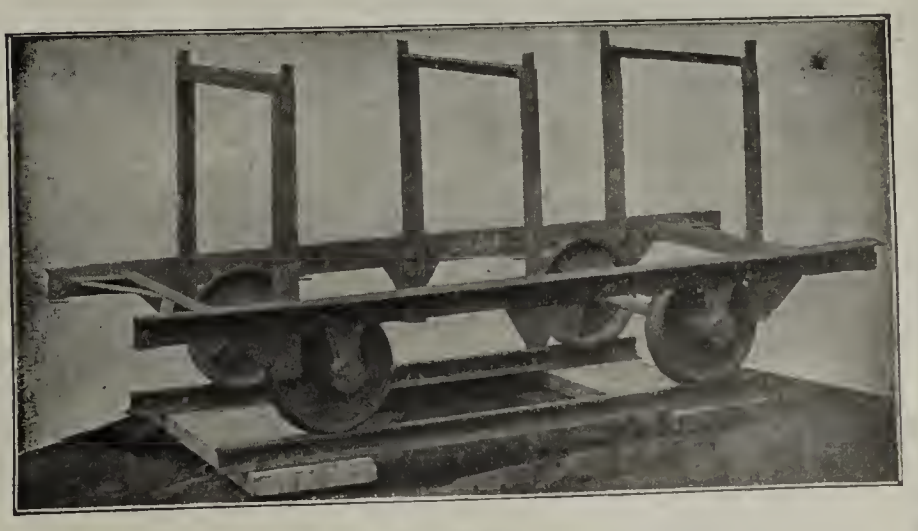

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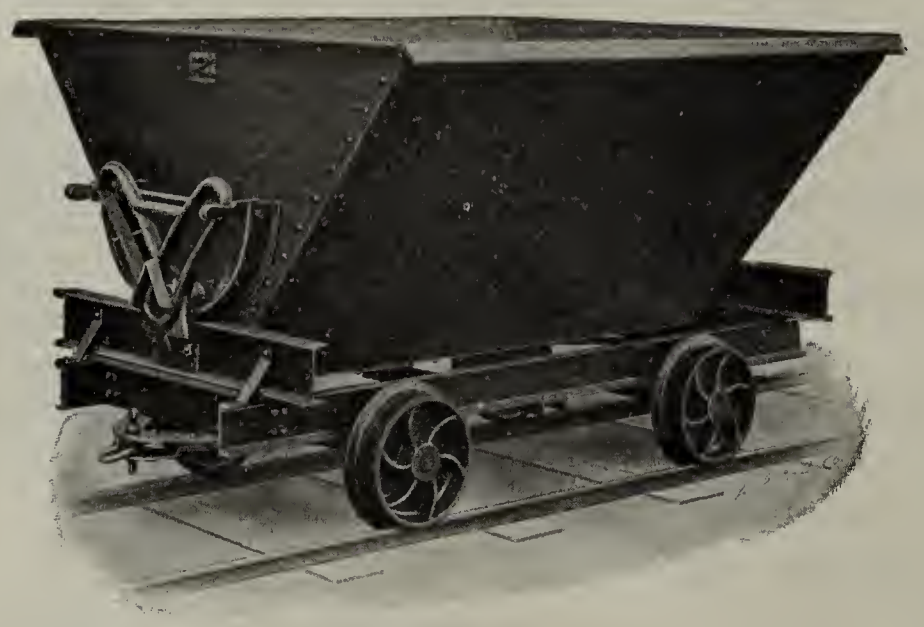

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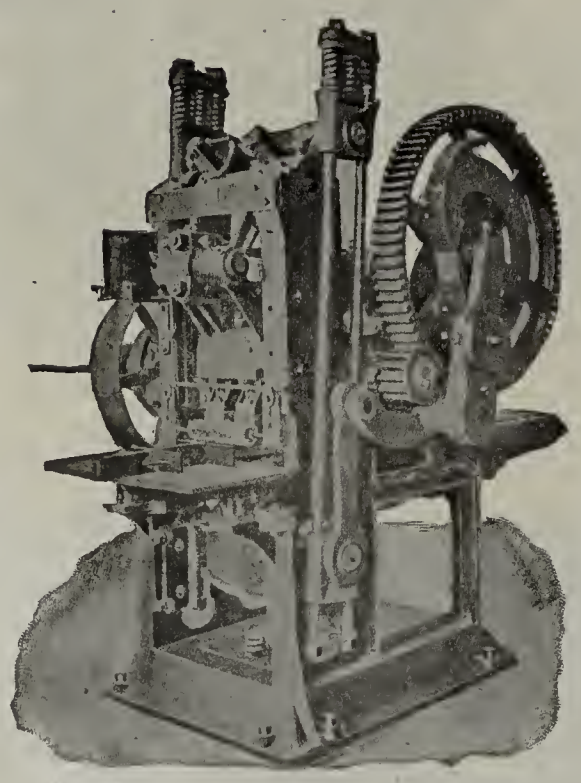

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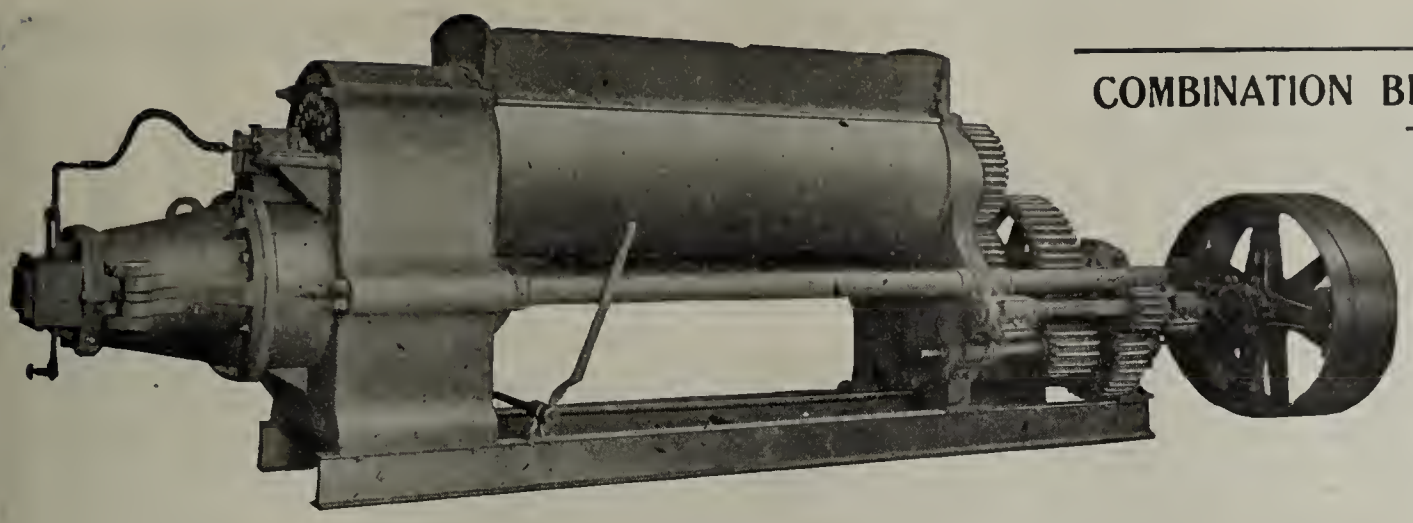

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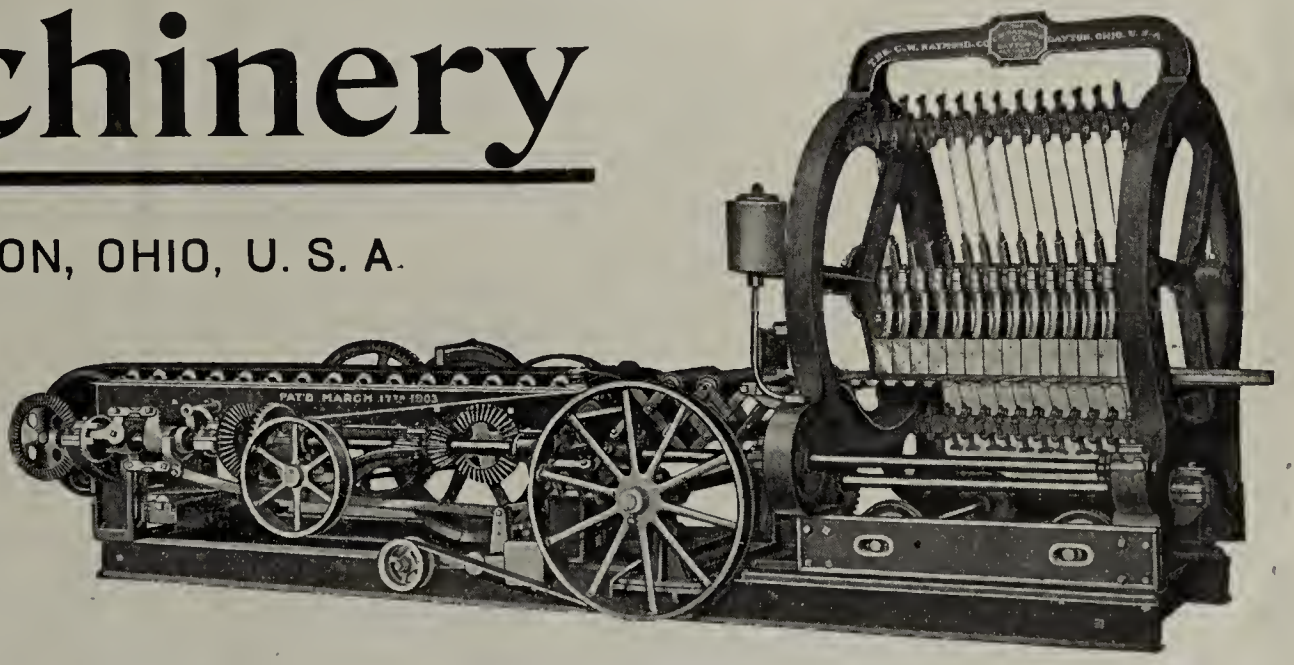

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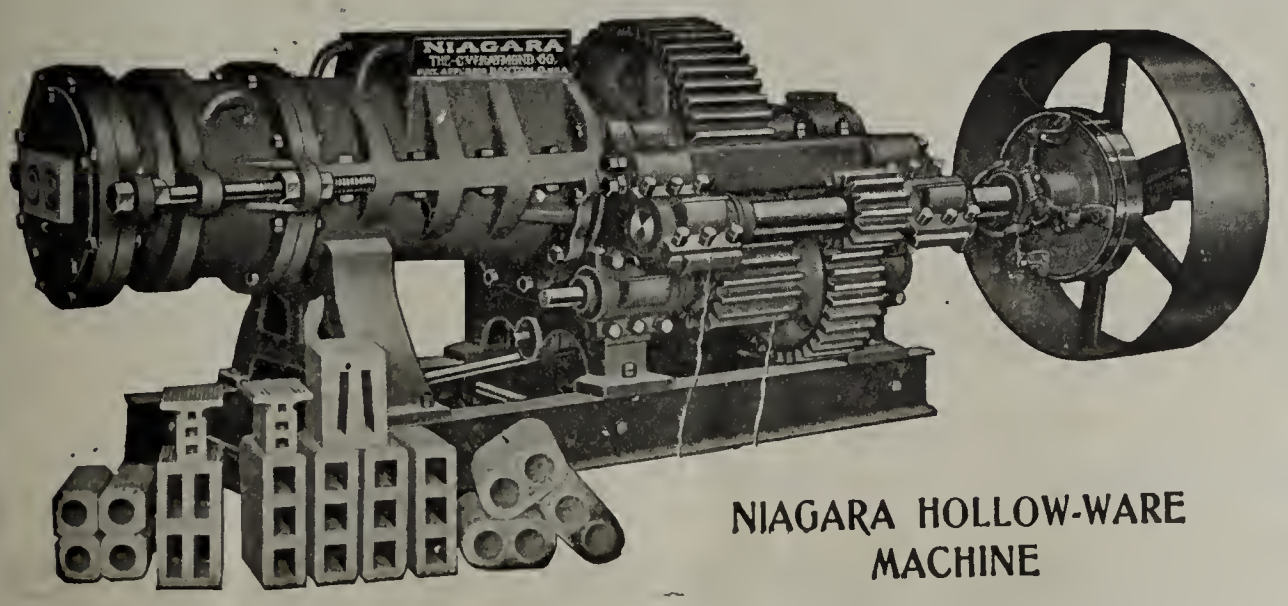

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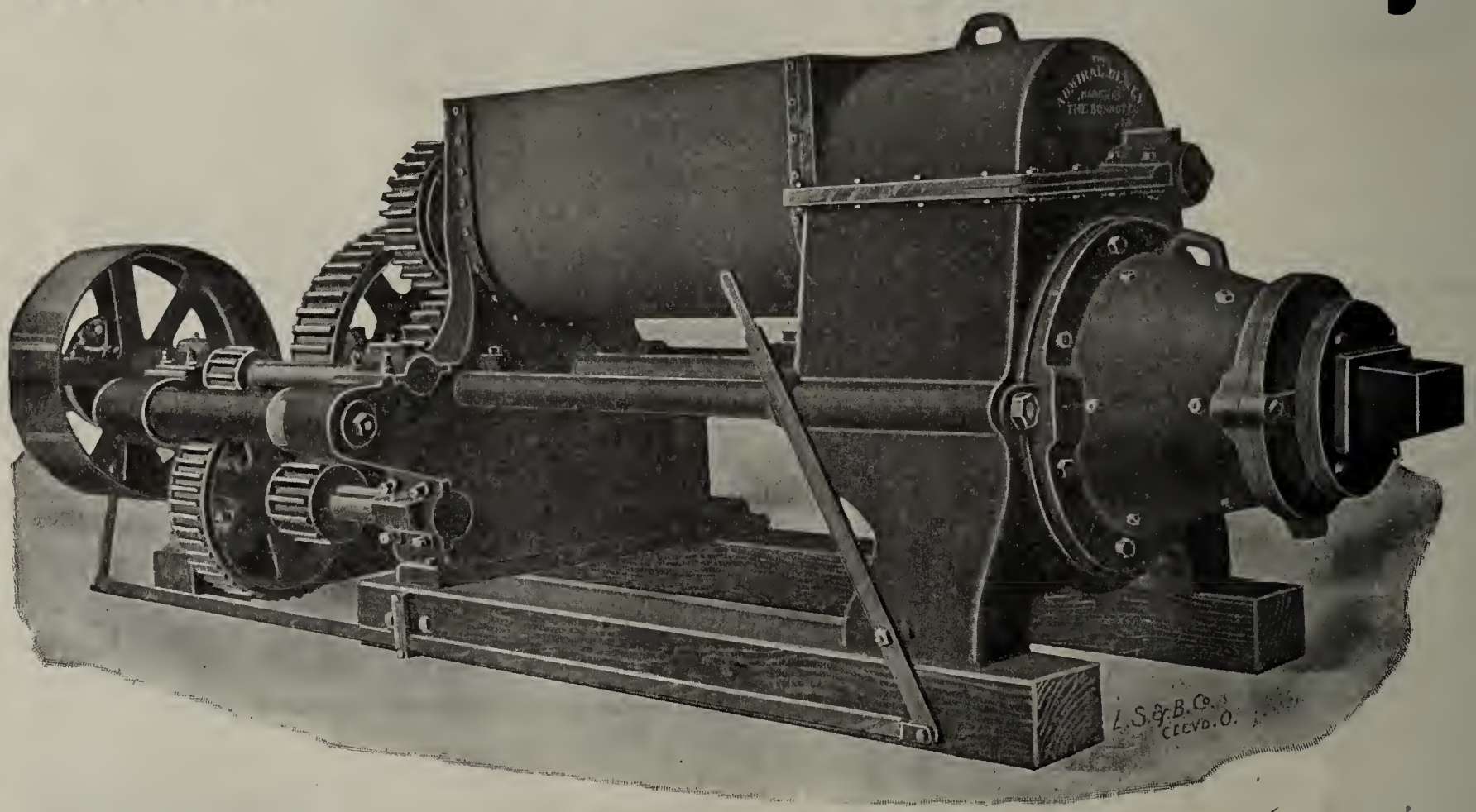

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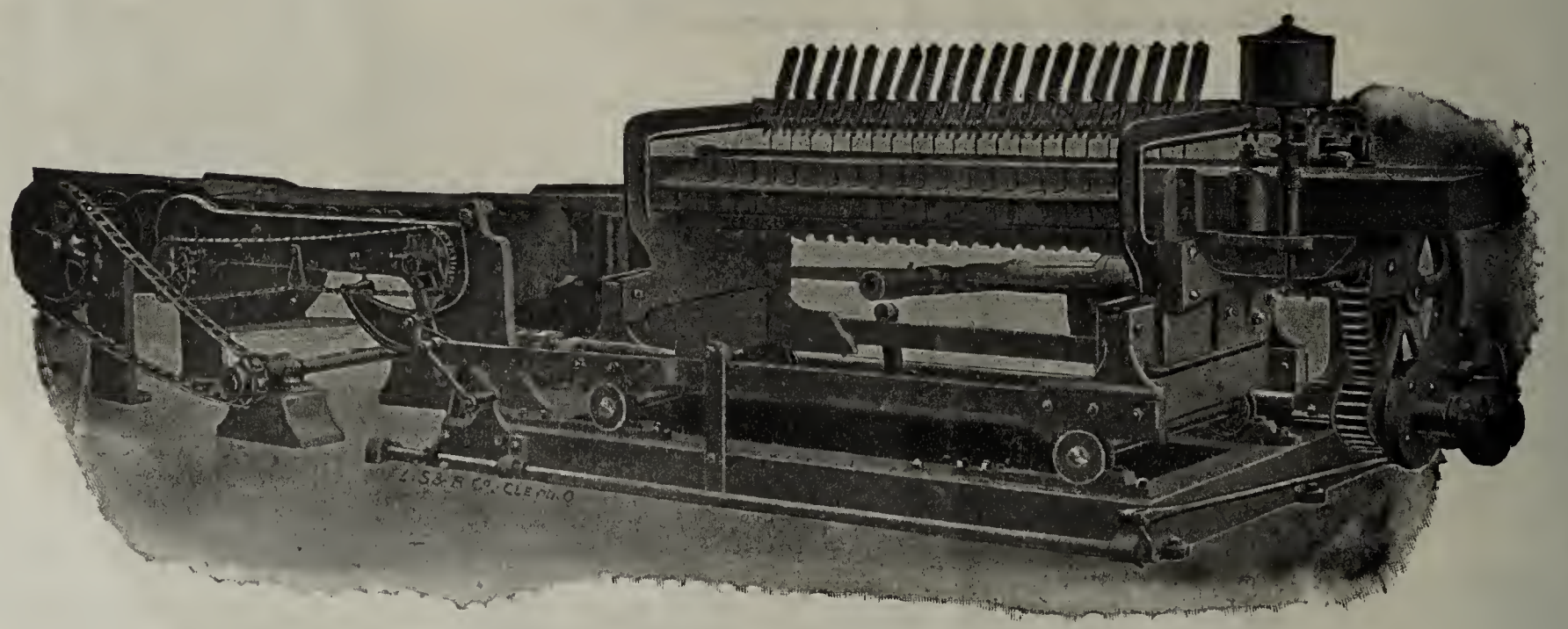

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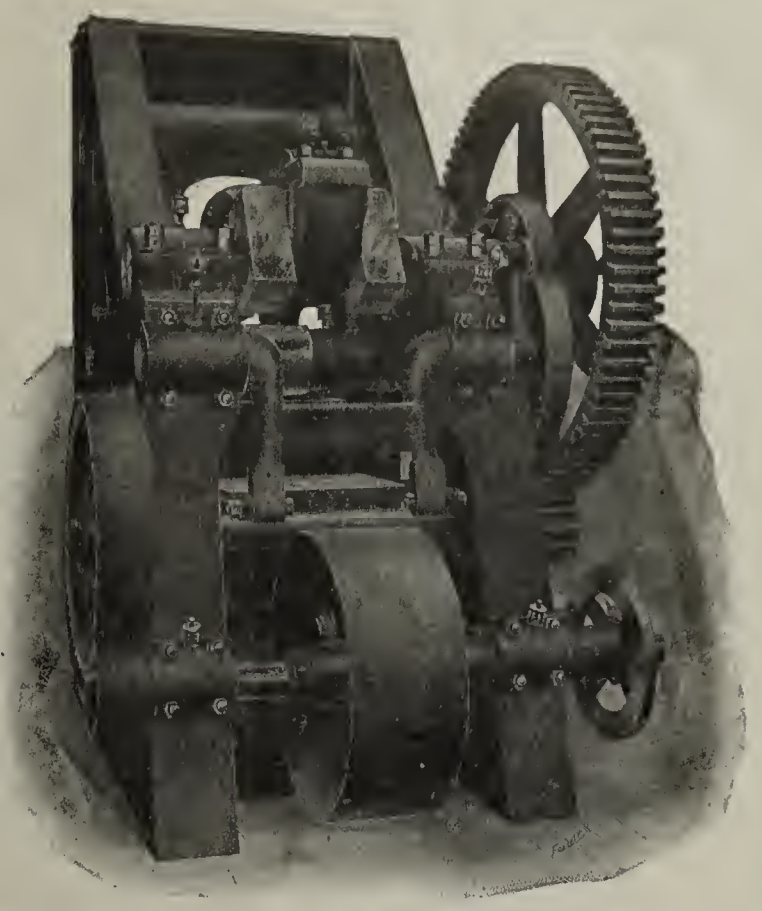

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One Step Further Forward

Even stronger than ever and all self-contained. Greater pressure and fewer working parts than any other machine. Simple, massive, compact. Running mechanism placed in rear, as shown in upper cut, enabling this machine to be SHIPPED IN ONE PIECE.

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Built in the following sizes:

CAPACITY PER HOUR	
Two-Mold	1,000 brick
Three-Mold	1,500 brick
Four-Mold	2,000 brick
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Write for
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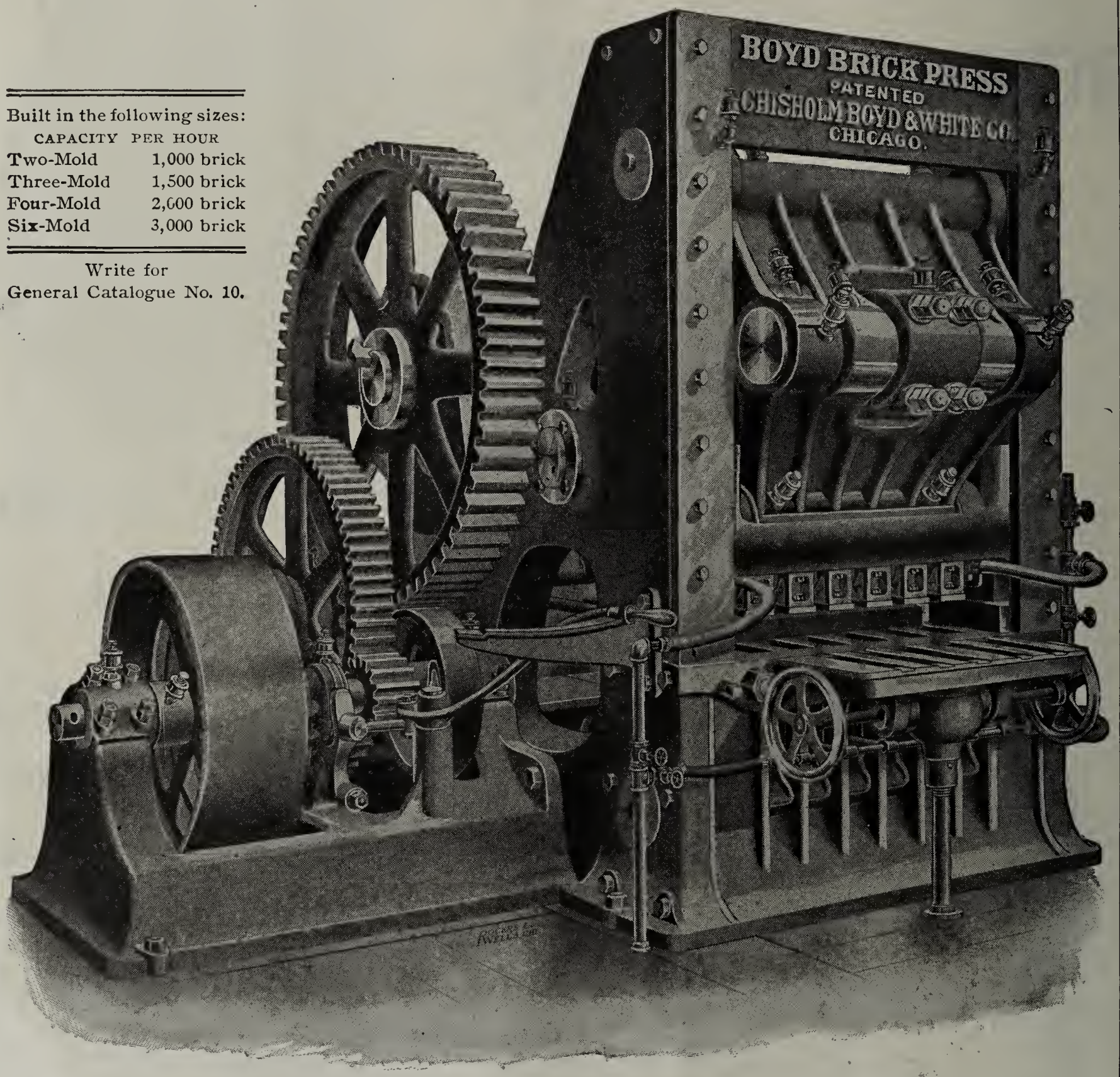

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THE BOYD PRESS has always been distinguished for originality in design and construction. It will make better brick from clay or shale than can be made from the same material by any other press. It is selected and purchased by the most progressive Brick Makers. The largest and most successful brick plants in the country are using Boyd Presses.

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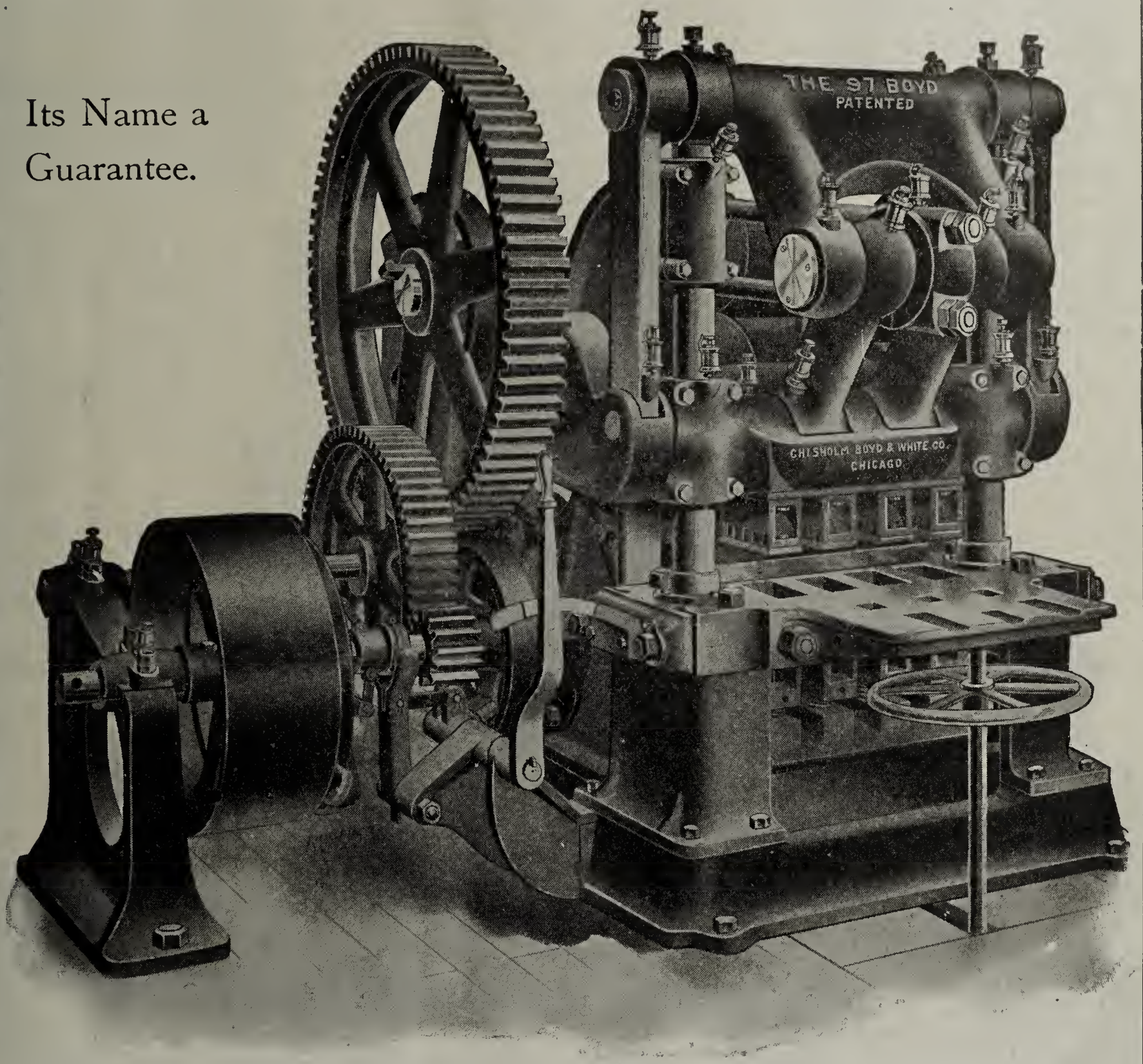
The Boyd Brick Press

The '97 Model

Its Name a Guarantee.



THE '97 MODEL BOYD BRICK PRESS has enormous strength and great durability; it is compact; the adjustments are convenient; it operates quietly and smoothly; the workmanship and material are of the best; the design ingenious, and shows the most perfect application of scientific and mechanical principles to the art of brickmaking.

THE BOYD is the only Brick Press provided with an independent adjusting device for regulating the amount of clay in the molds and the pressure on the brick. This feature positively ensures equal pressure and finish on both sides of the brick, and no granulated or soft centers.

Sent on trial and fully guaranteed. Seventy presses of this pattern now in use. Cannot be broken in pressing brick. Write for descriptive catalogue No. 9.

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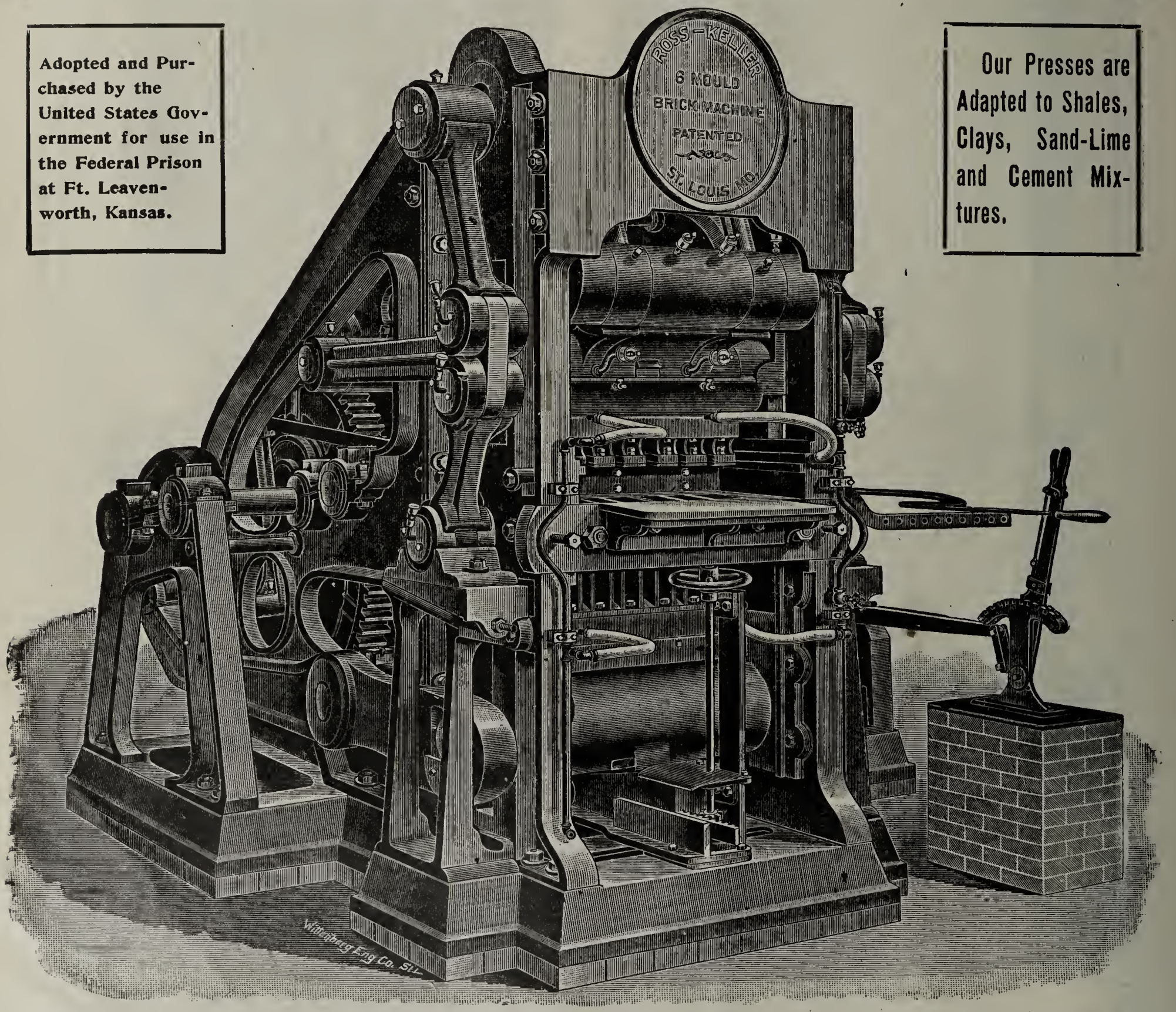
That we are building the best Sand-Lime Brick Plants being erected in this country to-day?

Have just completed and turned over to the purchasers a double Sand-Lime Plant, and made our guarantee good on the trial run. Machinery satisfactory. Product perfect. Everybody happy.

Let us tell you about our machinery, including our celebrated Ross-Keller Triple Pressure Brick Press, which has no equal for strength and efficiency.

Adopted and Purchased by the United States Government for use in the Federal Prison at Ft. Leavenworth, Kansas.



Our Presses are Adapted to Shales, Clays, Sand-Lime and Cement Mixtures.

For prices and particulars address

Ross-Keller Triple Pressure Brick Machine Co.

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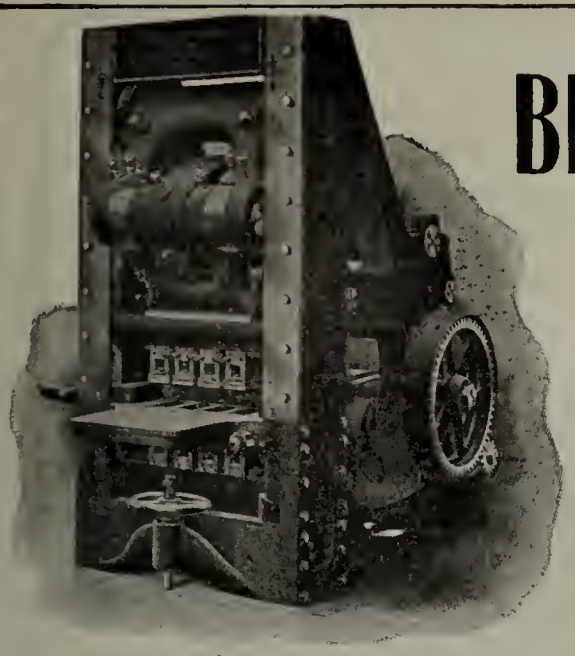
FULLERTON BUILDING, ST. LOUIS, MO., U. S. A.



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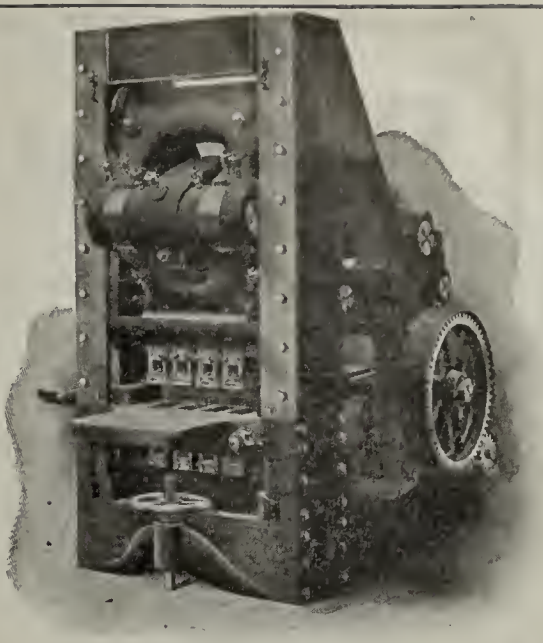
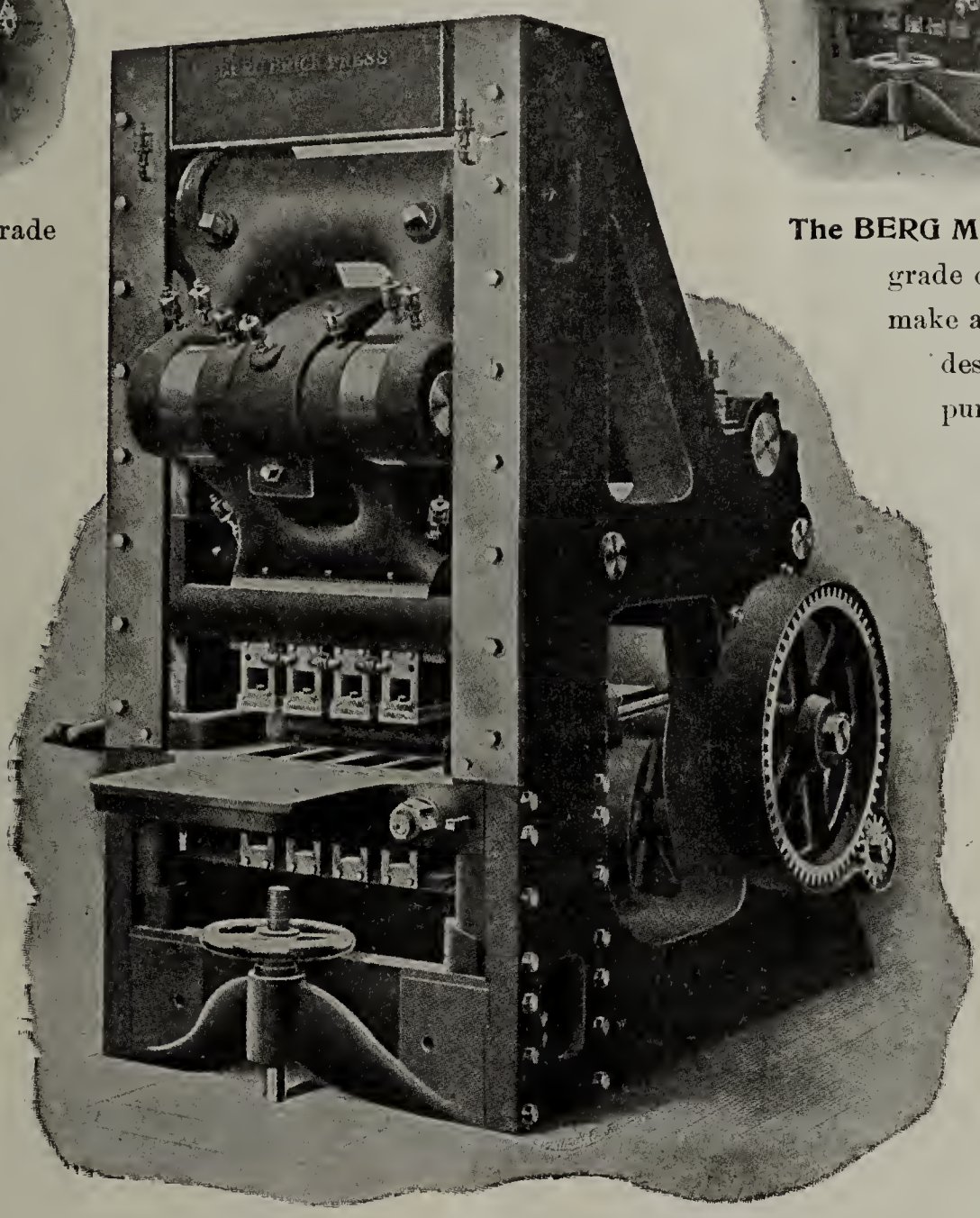
The highest development of the Art of Brickmaking Machinery so pronounced by the United States Government.





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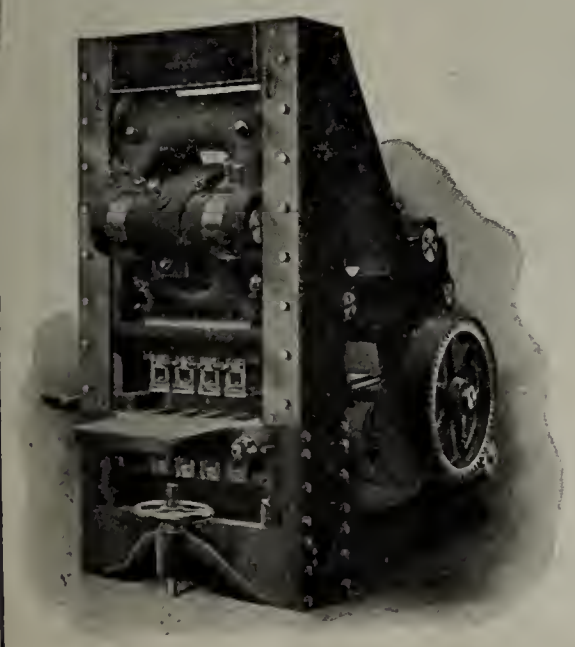
Three distinct pressures make the brick evenly pressed all through. No granulated centers of the brick.

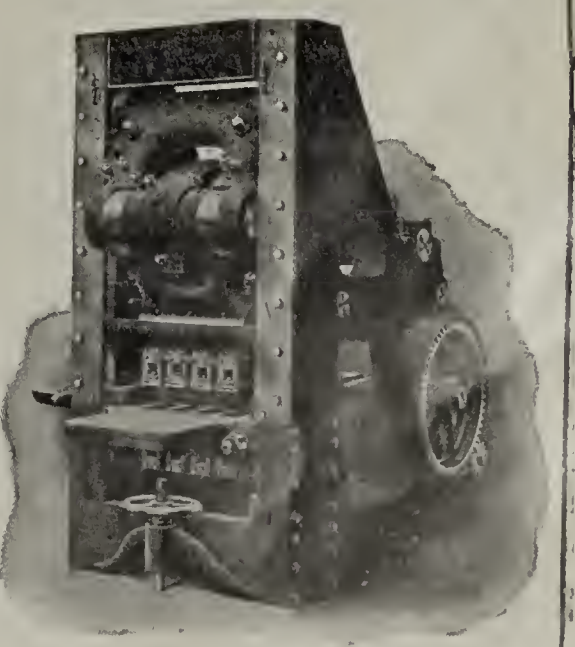
The BERG is the best for sand and cement because of its strong pressure. Uses less cement, makes cheaper brick. ●



The 1905 Berg Press

Many other steps further forward in improvement and highest grade of material and workmanship, also cut gearing. Fully guaranteed as to its success. Manufactured by its inventor in Toronto, Canada, at the Bertram Engine Works Co. Plans and specifications on the different kinds of plants furnished, also all equipments.

For prices and full particulars, address



A. BERG

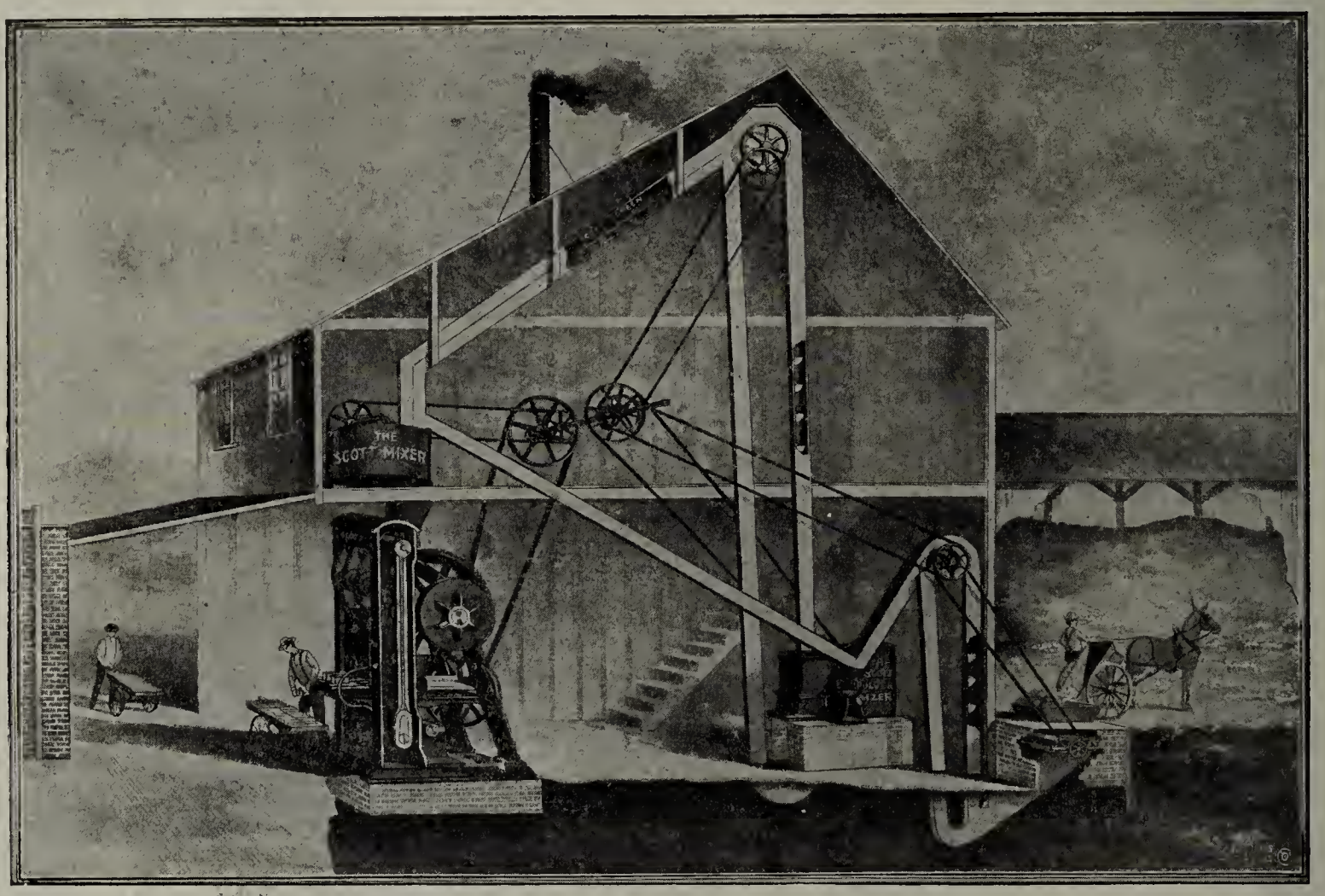
THE BERTRAM ENGINE WORKS

Toronto, Ontario, Canada

Rojestvensky

certainly was unfortunate, for while he had the knowledge of tactics within himself he was not backed up with the necessary *equipment, enthusiasm, organization.*

In waging our war against competition we claim that in our campaign we know that our facilities for manufacture are the very best; our organization is practically complete, and our enthusiasm—well, you can't imagine how strong that is unless you are operating an Andrus Press.

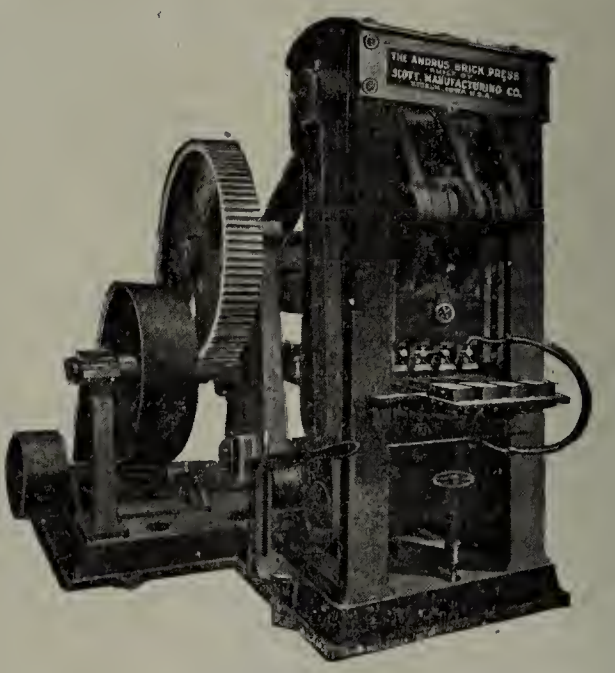


THE SCOTT NOISELESS PLANT.

We Install Complete Plants

Our Drafting Department Is At Your Service.

We cordially invite the brickmaker and capitalist to come to our city and see our presses in operation in the "St. Louis District," which is conceded to be the greatest Dry Press center in the world.



THIS IS THE PRESS THAT SCOTT BUILDS.

SCOTT MANUFACTURING CO.,

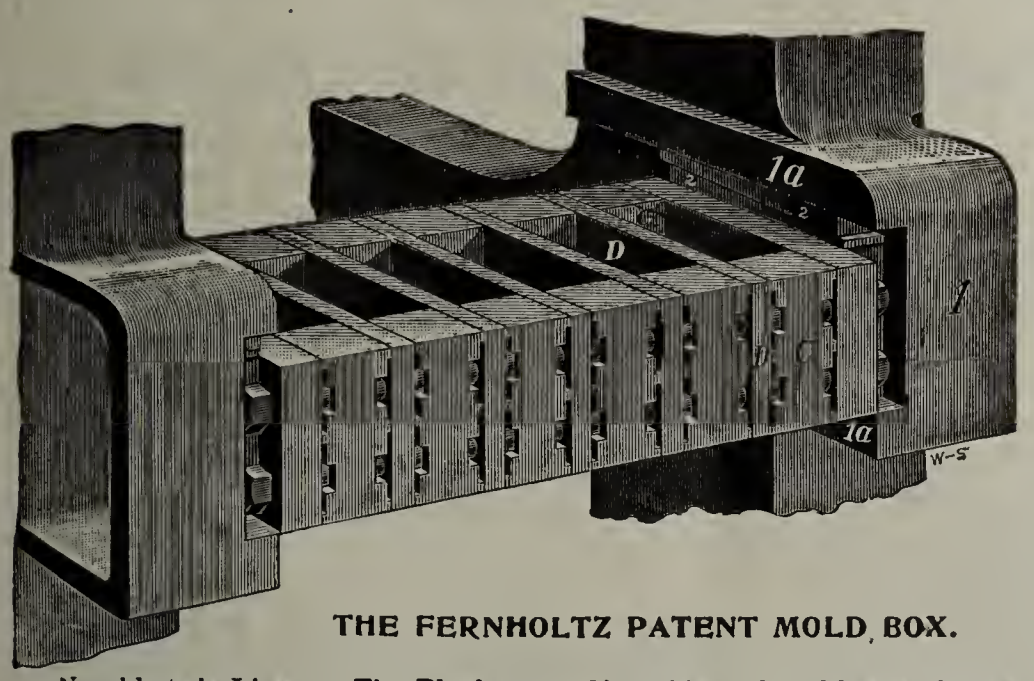
Commonwealth Trust Building, Saint Louis, Missouri.

The Fernholtz Brick Machinery Co.

Manufacturers of

The Celebrated Fernholtz Dry Press

Four mold Press 20,000 daily capacity. Six mold Press 30,000 daily capacity

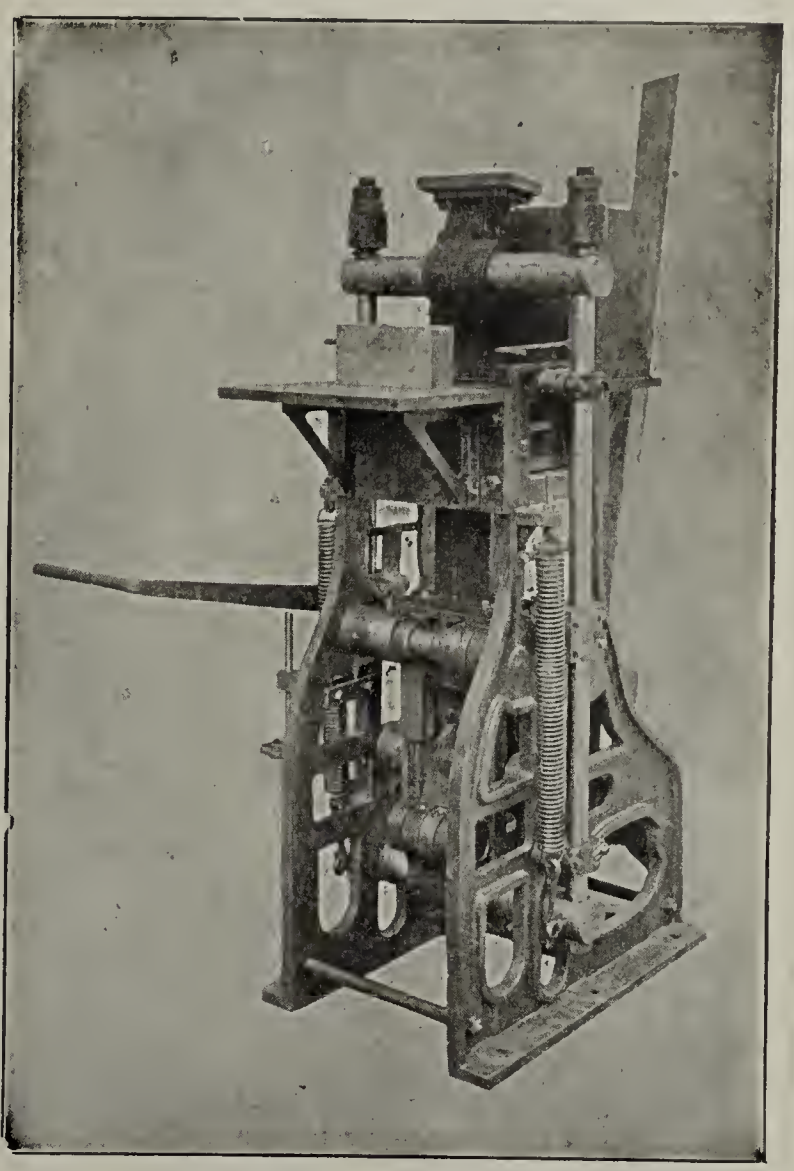


THE FERNHOLTZ PATENT MOLD BOX.

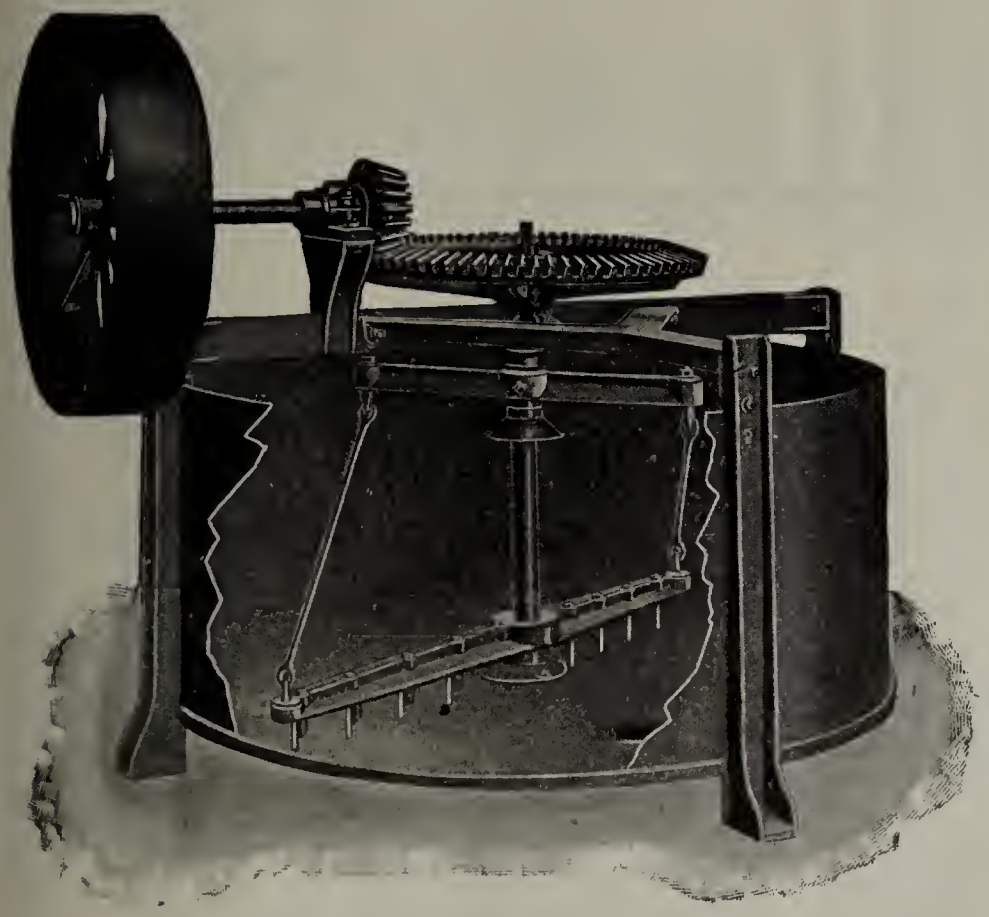
No old style Liners. The Blocks are adjustable and molds are always one size. We have put them in most all makes of Dry Press machines. Easily and quickly adjusted. They are made entirely out of chilled iron, the hardest known metal.

GRATH PATENT HAND POWER PRESS.

Especially adapted for ornamental designs. Any size brick up to 12⅝ inches long, 10 inches wide and 4¼ inches thick.
Brick set into kiln direct from press.



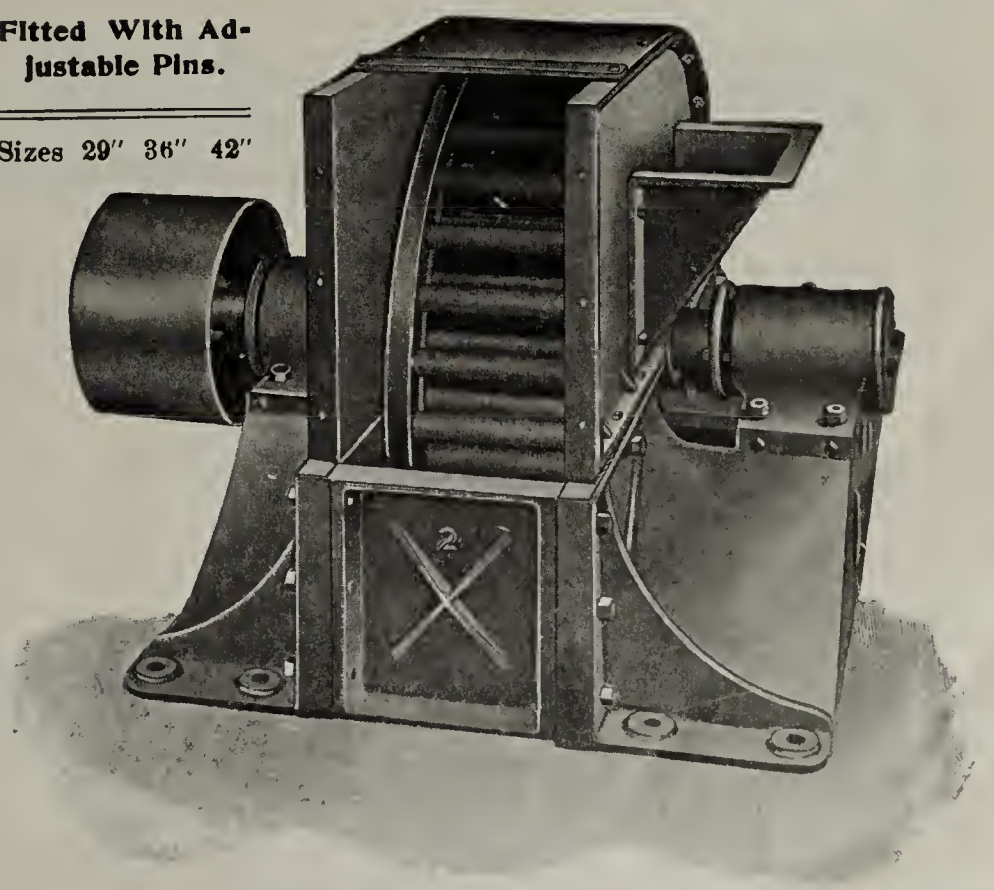
GRATH PATENT HAND POWER PRESS.



A GOOD MIXER IS ALWAYS APPRECIATED.

Fitted With Adjustable Pins.

Sizes 29" 36" 42"

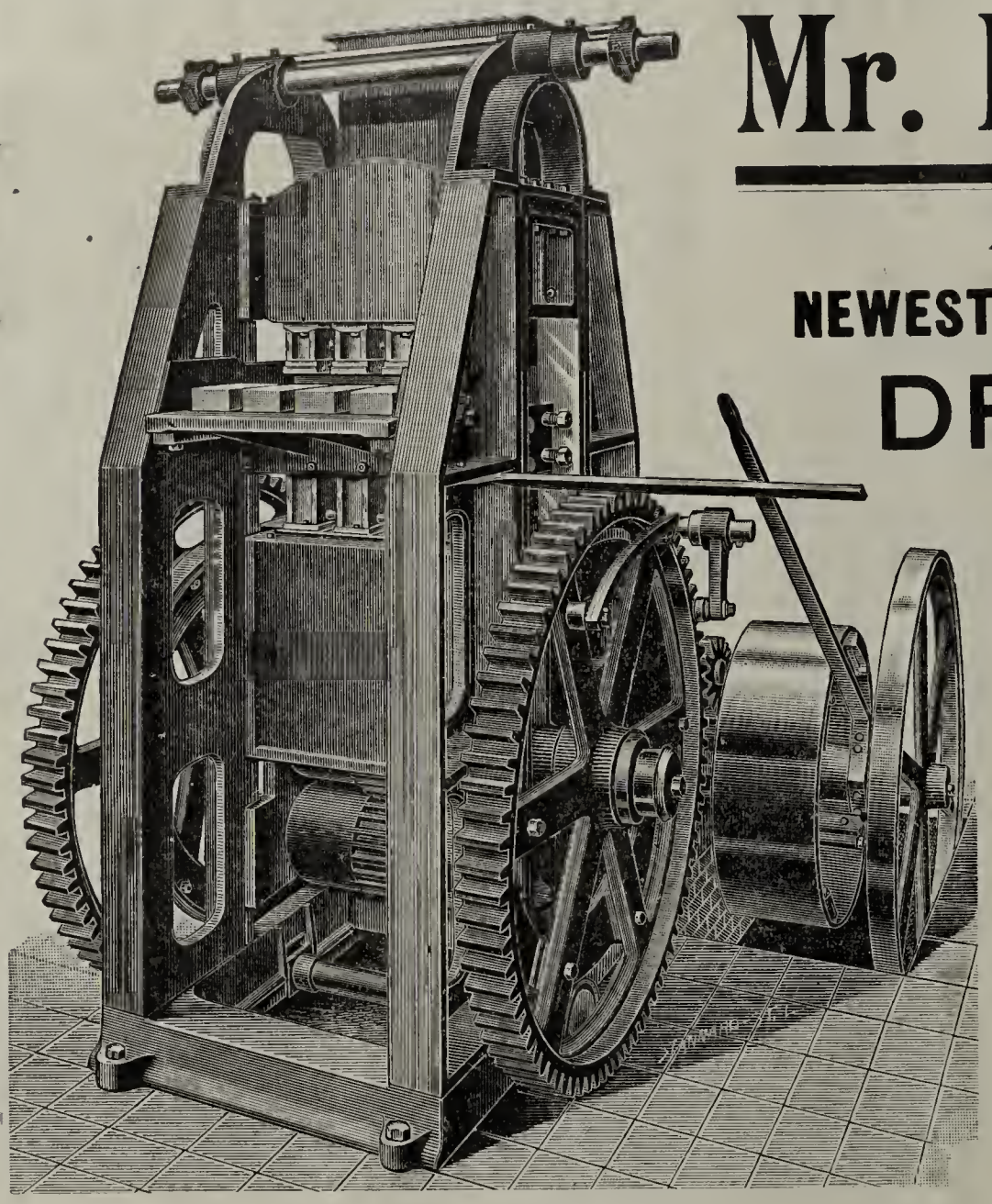


THE FERNHOLTZ CLAY PULVERIZER.

The Fernholtz Brick Machinery Co.

Cable Address "Fernbrick." Western Union Code.

Boyle Avenue and Old Manchester Road, ST. LOUIS, MO., U. S.A.



Mr. Brickmaker

Are you looking for the

NEWEST, BEST AND CHEAPEST IN

DRY-PRESS BRICK MACHINES?

If so, you cannot afford to overlook the strong points of excellence and the remarkable **simplicity, strength** and **efficiency** fonnd in

THE RELIANCE

"The Machine with a Future"

Radical departure from old principles.

Unique in construction, sound in principle, unrivaled in attainment!

Makes not only Brick but Money

A FEW POINTS:

1. Weight and Floor Space about one-half that of any other Brick Machine.
2. Compression of Clay Perfect and Uniform. (Entirely new Principle).
3. Every Brick is a Face Brick. There are No Granulations.
4. Adjustment permits any pressure desired (A Feature peculiar to the **RELIANCE.**)
5. Cheapest because having fewest parts. (Also cheapest to keep in repair).

EMINENTLY PRACTICAL AND ECONOMICAL

WRITE TO-DAY FOR PARTICULARS.

SEND CLAY FOR SAMPLE BRICKS.

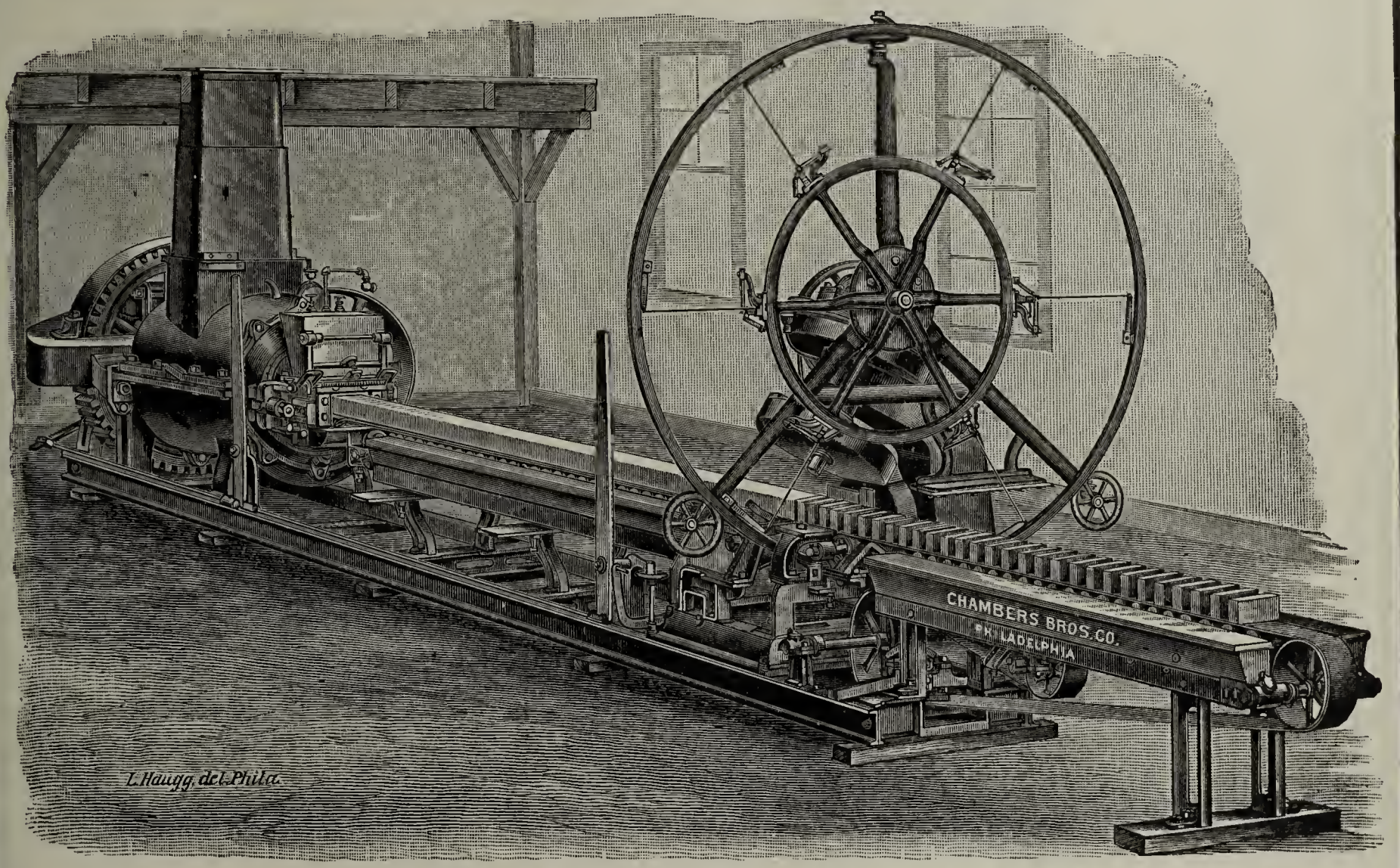
Made By the

RELIANCE MACHINE AND TOOL WORKS

ST. LOUIS, MO.

MACHINERY FOR BUILDING BRICK
AND FOR STREET PAVERS

ROUND CORNER PAVING BRICK WITHOUT REPRESSING



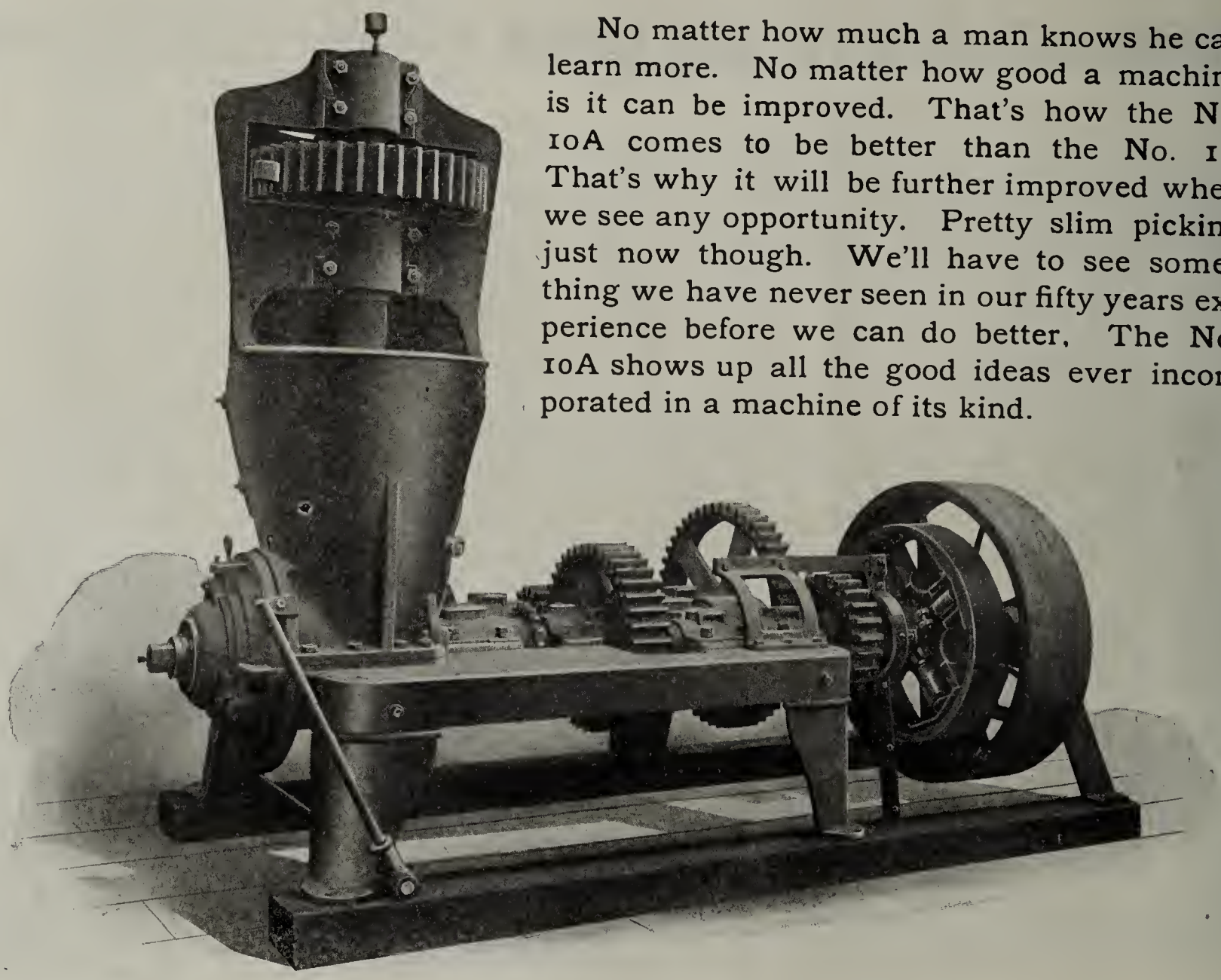
THE CHAMBERS AUTOMATIC SIDE-CUT BRICK MACHINE.

Automatic End Cut Brick Machines of five sizes, having capacity from 10,000 to over 100,000 brick daily under favorable conditions.

CHAMBERS BROTHERS COMPANY
52D AND MEDIA STREETS
PHILADELPHIA, PA.

E. R. FRAZIER, Chicago Agent,
59 West Jackson Boulevard.

IMPROVEMENTS



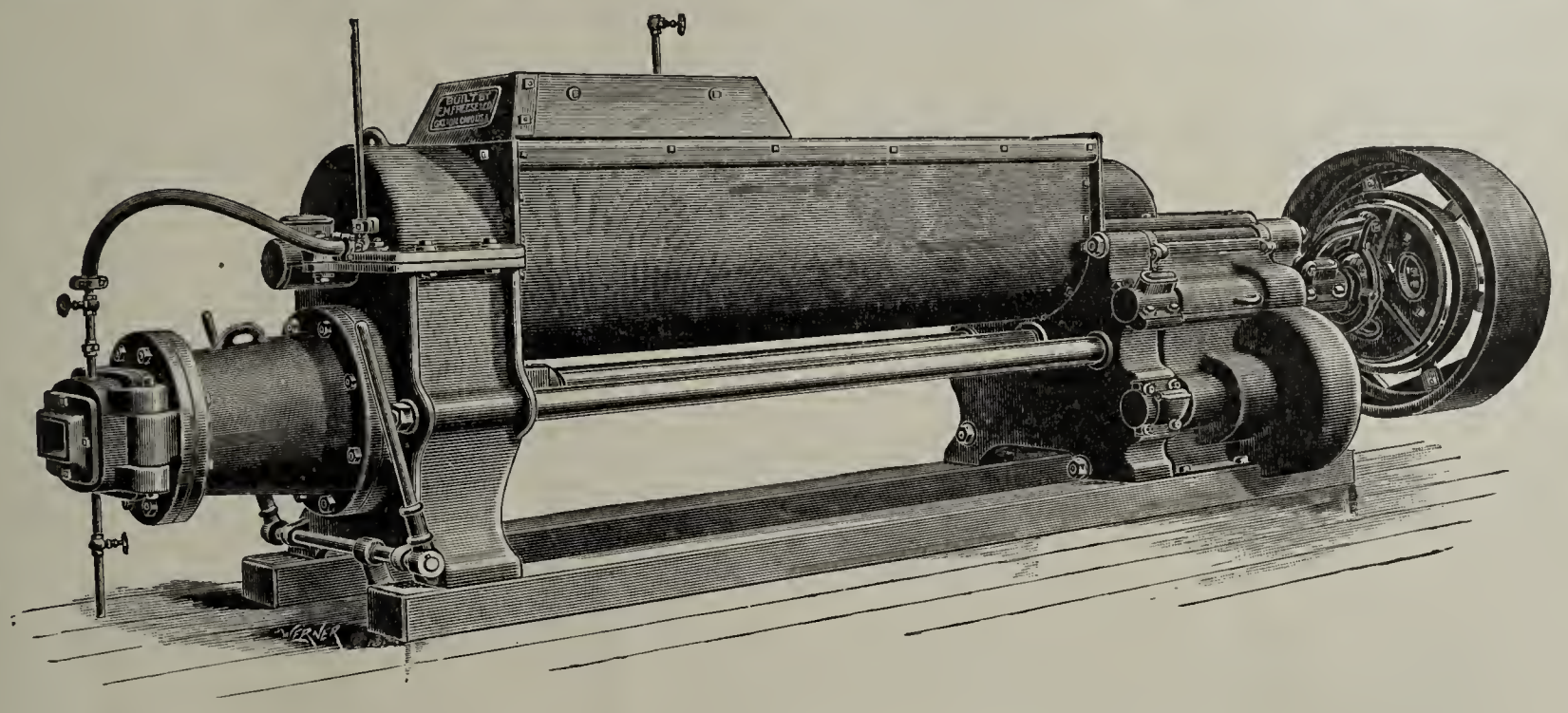
No matter how much a man knows he can learn more. No matter how good a machine is it can be improved. That's how the No. 10A comes to be better than the No. 10. That's why it will be further improved when we see any opportunity. Pretty slim picking just now though. We'll have to see something we have never seen in our fifty years experience before we can do better. The No. 10A shows up all the good ideas ever incorporated in a machine of its kind.

The New No. 10A

is a machine for making drain-tile, brick and hollow block, possessing particular advantages when two or more kinds of ware are to be made with a single outfit. It's built a whole lot better than any machine of its kind was ever built before and the service it gives is like its building. Better find out about it. It's worth your time.

H. BREWER & CO., TECUMSEH, MICHIGAN.

UNION BRICK MACHINES



We build these Machines in five sizes. Capacities to 10,000 brick per hour.

Several hundred are in everyday use. They do first-class work and are convenient, economical and durable. This can be verified by investigation.

We also build Brick Machines with separate Pug Mill.

Don't forget our Automatic Cutters. **They give satisfaction.**

State your requirements and let us furnish particulars.

E. M. FREESE & CO.

GALION - - - - OHIO

LAMINATION is the source of more loss, more worry and more anxiety than all other troubles of a brickmaker

KENTON C READ, Pres. ANDY O'CONNELL, Vice Pres. and Gen'l Mgr C. M. MILLER, Sec.-Treas.

THE

C. M. Miller Mfg. and Mining Co. Inc.

MAKERS OF

High Grade Veneer and Building Brick

Office, 331 Ohio Street.

New Phone 1142.

Terre Haute, Ind. Dec. 22. *1904*

Mr. H. L. Hix, Mgr.

The Wallace Mfg. Co., Frankfort, Ind.:

Dear Sir—I feel that I must tell you my experience with the brick made on the Intermediate Wonder:—

A few days ago a very prominent contractor asked me to bring him some samples of our brick. I fixed up some samples and started to his place, and just as soon as he saw them, he said: "I don't want them—they are no good; I would not lay one of that kind of brick," but I begged him to look at them and tell me why he did not want them. He asked me if he could break one of them, and I said, "Yes, break all of them." So he took his hammer and hit one on the corner; then he looked up at me and said: "I never saw a stiff mud brick like that;" then he broke it all up, just as nice as any brick, and he said: "That is the first stiff mud brick I ever saw without lamination," and that they were all right.

We are now selling our brick as fast as we can deliver them.

Pardon me for taking your time, and with SUCCESS to the WONDER, I am,

Yours very truly,

Andy Connell
V P and Gen Mgr.

In the event that you want to make brick filled with LAMINATION, CRACKS and CROOKS, a Wonder Machine will not answer your purpose.

THE WALLACE MFG. CO.

FRANKFORT, IND., U. S. A.

Highest point of perfection achieved by the **WONDER.**

It works clays where other machines fail.

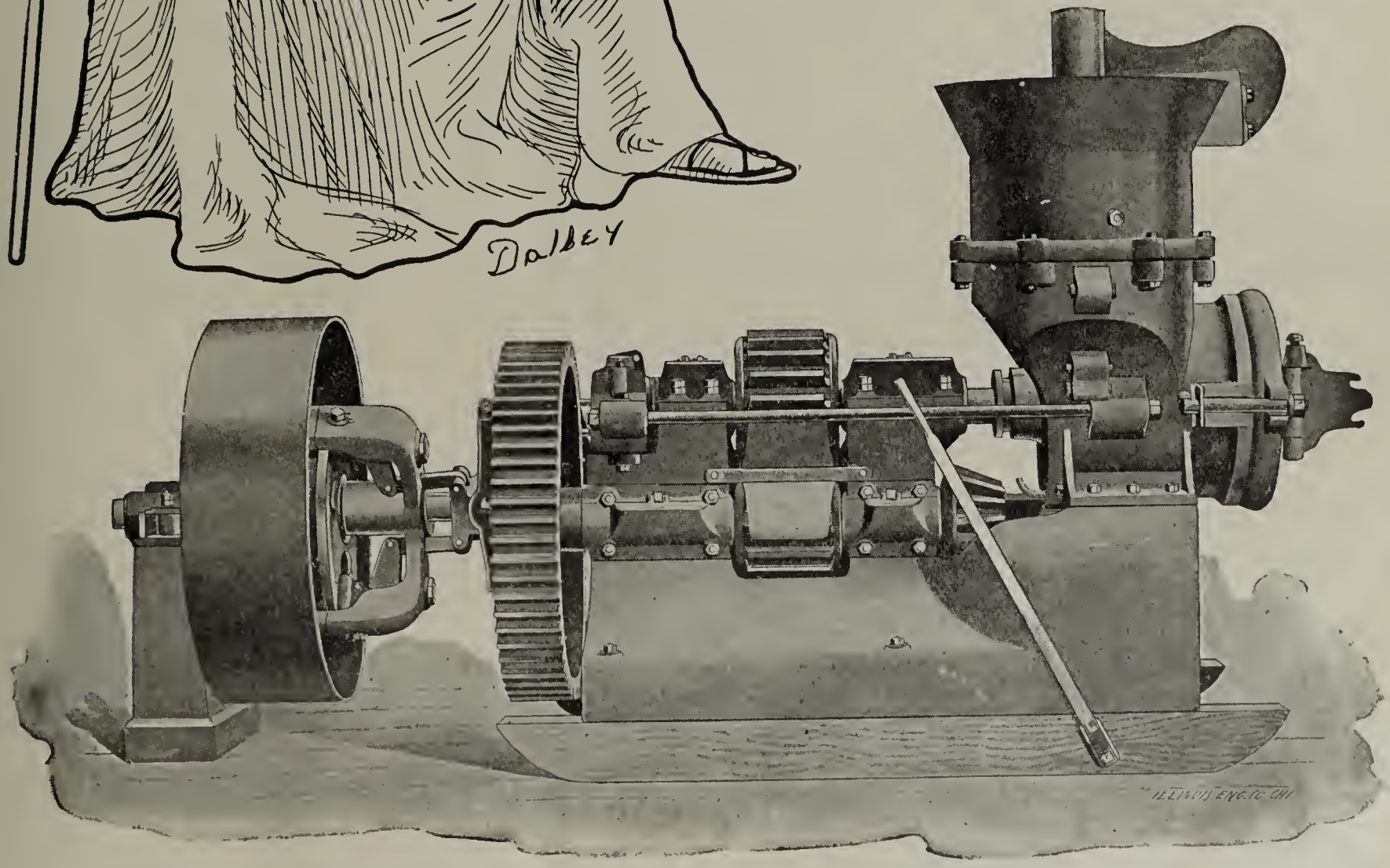
We are specialists in our line and difficult cases are sent to us for treatment.

Our experience has been large and varied, and may be of value to you.

Our service is yours for the asking.

Write us.

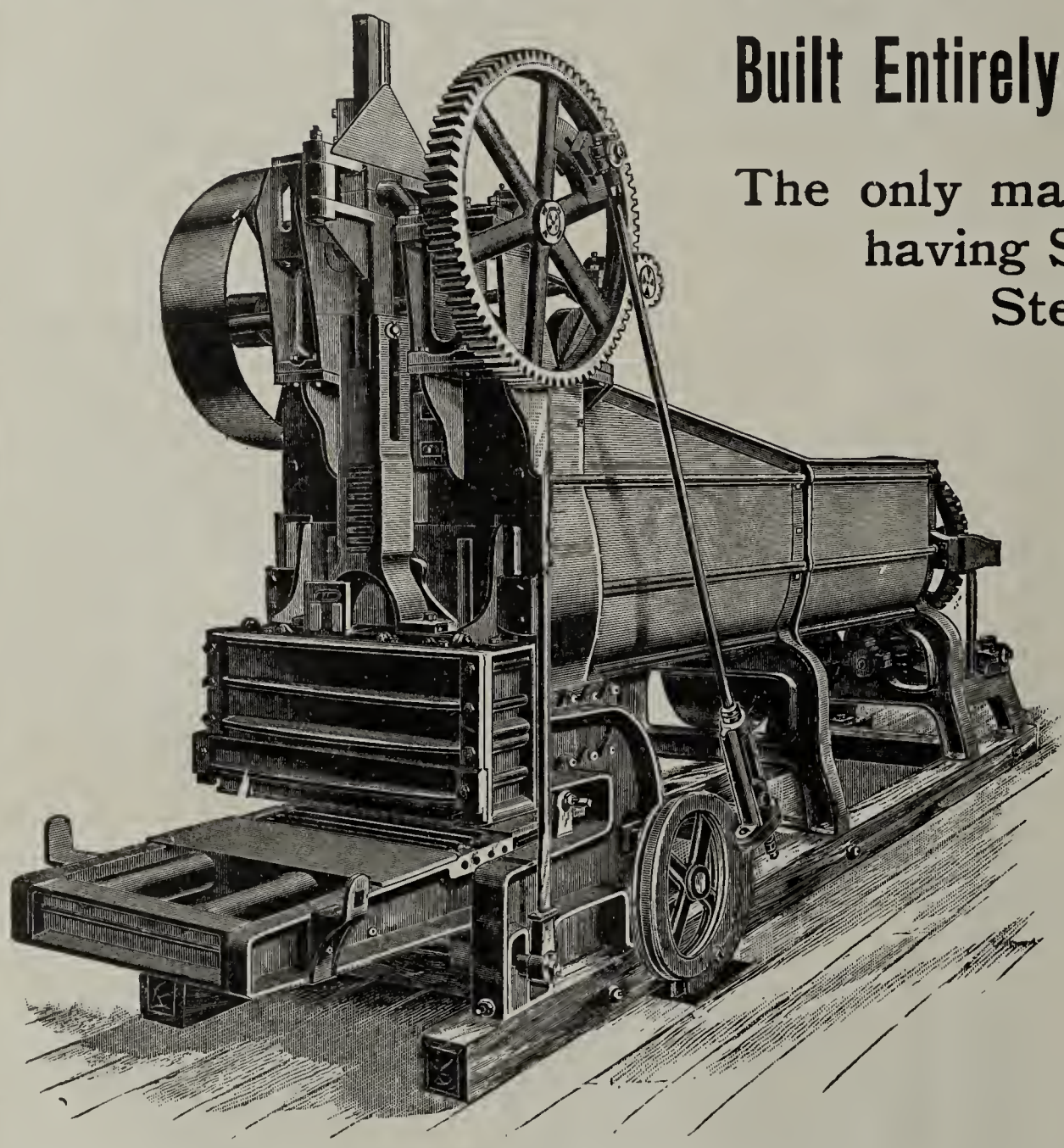
Our line is complete. We manufacture Brick Machines, Drain Tile Machines, Brick and Tile Cutting Tables, Automatic Cutters, Clay Preparing and Clay Reducing Machinery, and a full line of Brick and Tile Yard Supplies.



The Wallace Mfg. Co.

FRANKFORT, IND., U. S. A.

THE POTTS
HORIZONTAL BRICK MACHINE



Built Entirely of Iron and Steel.

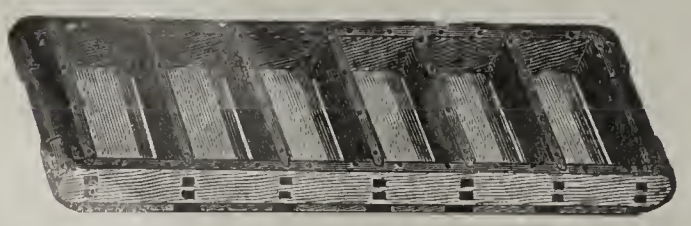
The only machine of this class having Steel Gear and Steel Shaft.

Built of the Best Material by the Best Workmen.

Simple, Strong and Durable.

No extra pug mill required to enable working the clay direct from the bank. Its great strength enables working the clay as stiff as practicable, insuring brick which will be STRAIGHT and SQUARE.

THE LEADER OF ALL SAND MOULD MACHINES.



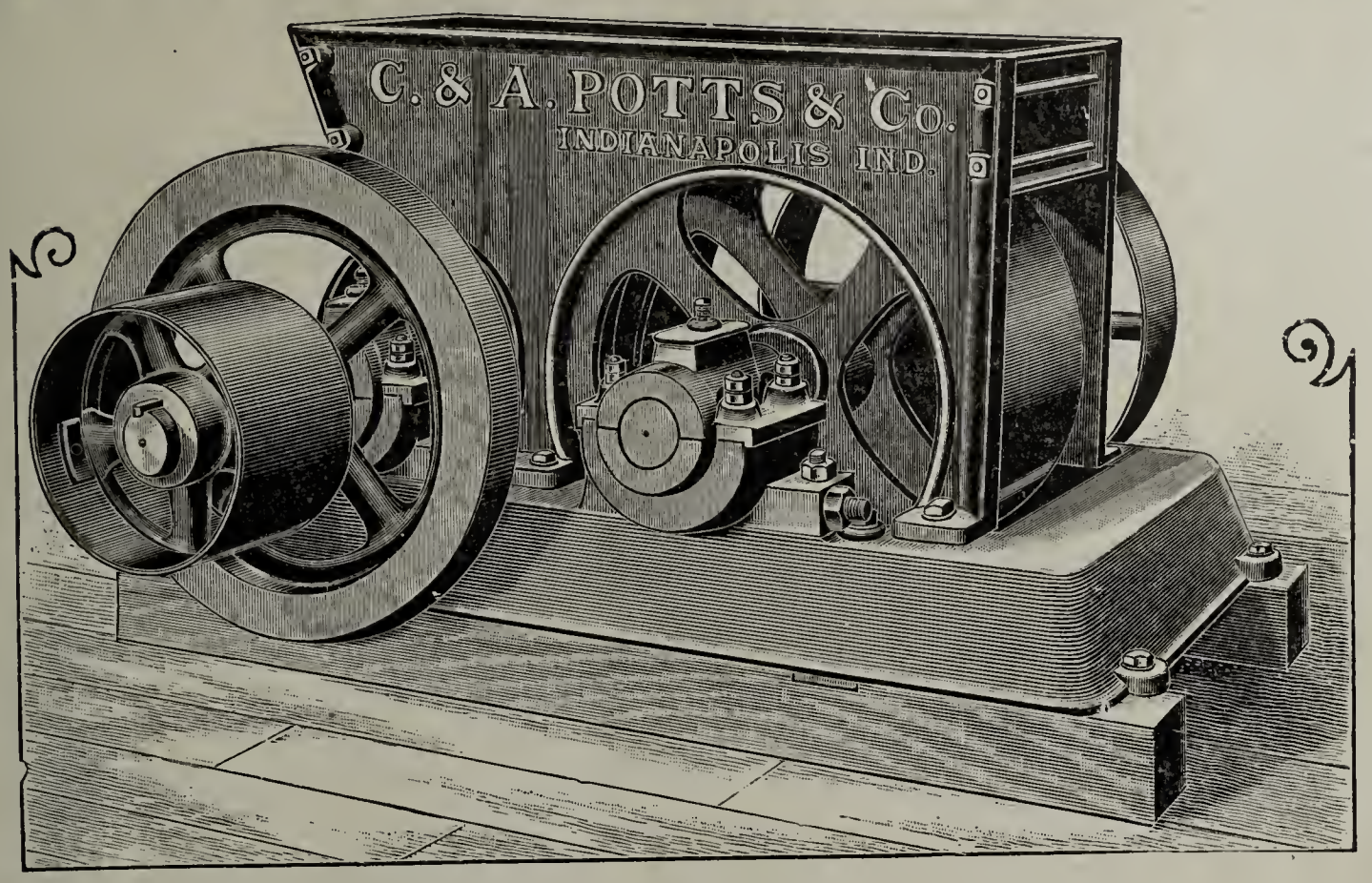
BRICK MOULDS A SPECIALTY

QUALITY IS OUR AIM.

We manufacture a complete line of Brick Yard Supplies. Write for prices.

C. & A. POTTS & CO., Indianapolis, Ind.

THE POTTS DISINTEGRATOR



Is not a spite machine, but is built the best possible. Having Heavy Chilled Rolls, Ring Oiling Bearings, Shafts of Steel and large in Diameter. The most successful machine for grinding out sticky clays and separating the stone.

THE POTTS MOULD SANDER

Simple in Construction,

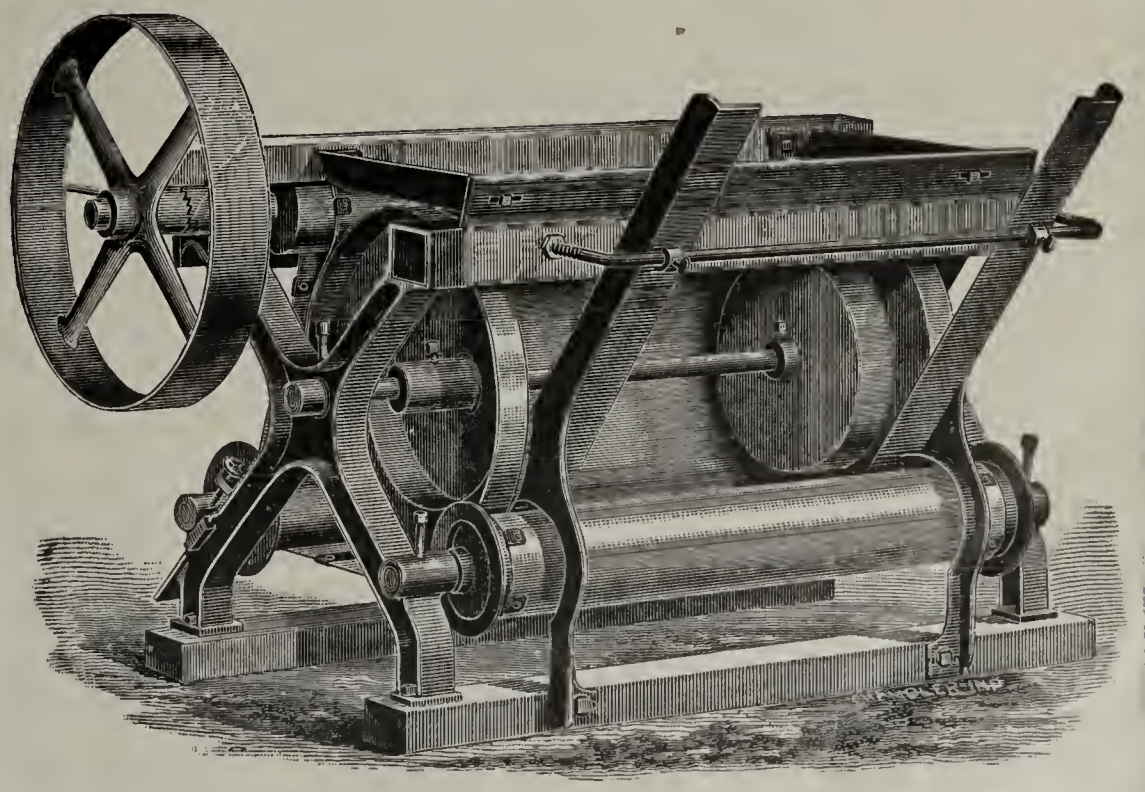
Strong and Durable,

Sands the Moulds Perfectly,

Never Strikes or gets Drunk,

Always Ready for Work,

No Brick Machine Complete without this Machine.



Patented February 5, 1889.

We make a specialty of equipping Sand Mould plants complete. We are the largest manufacturers of this class of machinery in the world. Write for prices.

C. & A. POTTS & CO., Indianaoplis, Ind.

The "BUILT RIGHT

It is important if you have a dryer proposition to consult our dryer engineers. They are experts on Waste Heat Dryers, and will look over your yard and design you a dryer system to meet your needs. There are lots of points which bear on the successful operation of a Waste Heat Dryer. These should all be considered.

There is nothing like correctness of construction, and that is what we insure. If we take the commission of building you a perfect dryer you will get it. We first study your conditions and then design the best dryer to work under those conditions. **THEN WE BUILD THE WHOLE OUTFIT IN OUR OWN SHOPS.** We don't buy outside and divide the responsibility. When that dryer is done we are sure that it is "Built Right" and will "Run Right." Isn't it best to deal that way?

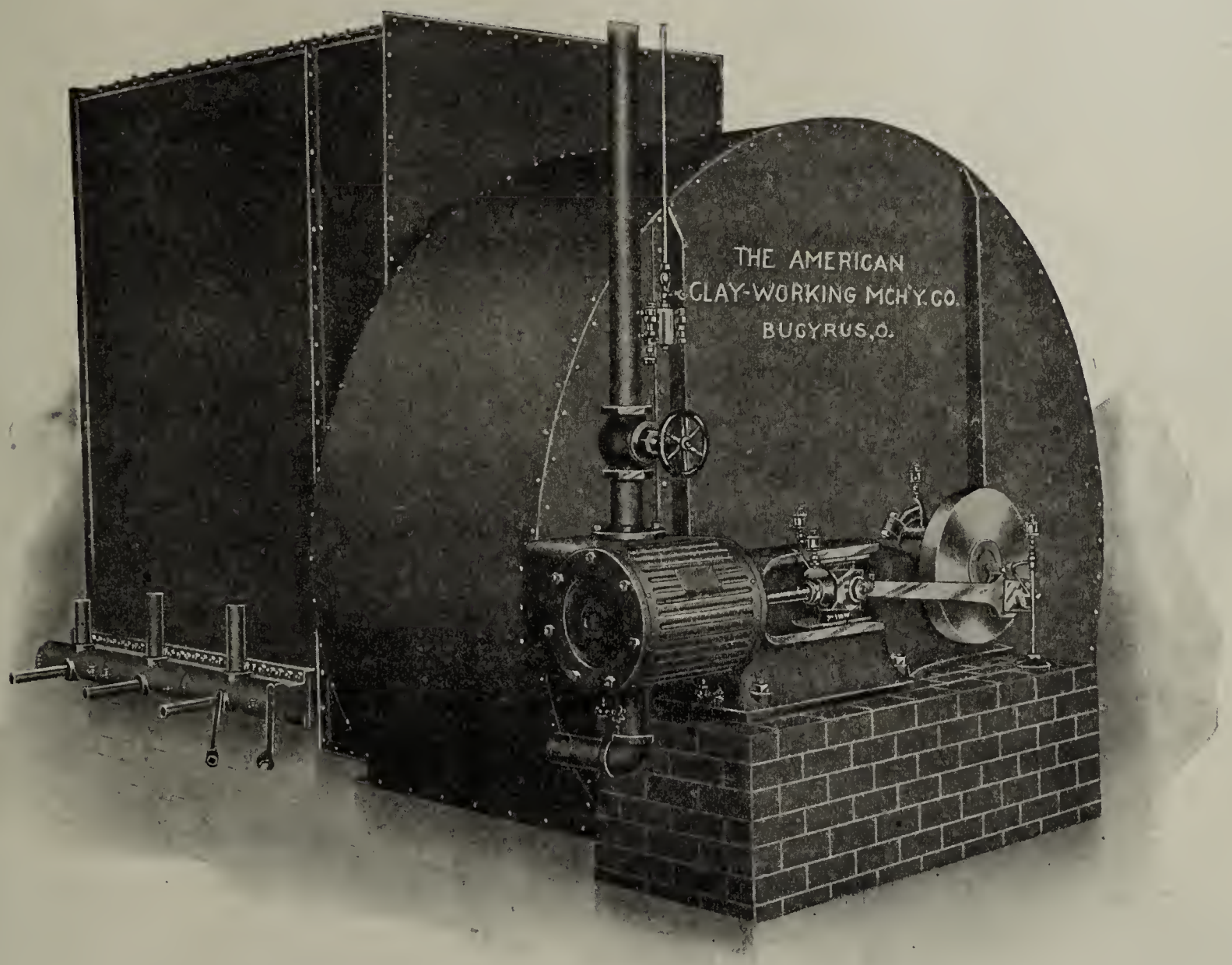
We are specialists on Waste Heat Dryers. We are pioneers in the business and have brought them to their present state of excellence. Our Waste Heat Dryer department has been given the most careful study, most tireless research, unflagging energy and unstinted cash to make it as near perfection as can be attained.

WE BUILD OUR OWN FANS. Every pound of metal that goes into them passes our own inspectors. Every bolt hole is punched under the eyes of our own men. Every rivet is pneumatically driven by our own workmen under our own superintendent.

In a word we KNOW WHAT OUR FANS ARE. We build them and we are positive that they are "Built Right and Run Right." You will find this trade-mark on every one of our fans, "Built Right Run Right" and it means exactly what it says.

Were we to buy our fans and other apparatus in the open market the fan makers would want a profit, and would strive to get the order, and to get it would cut the cost, and in the end you would have an inferior job in your plant. We can't afford to risk quality, because the permanent successful operation of the dryer rests largely upon it. If we make such a pronounced stand for quality, why shouldn't you? It means most of all to you. You pay for the dryer, and the success or failure of your plant depends upon it. We want to remove, so far as possible, all chance of your failure. That's why we build our own fans and other dryer apparatus so that we may be **sure** that our part of your plant is a success maker.

RUN RIGHT" Dryer.



We Build Our Own Dryer Apparatus and We Know Its Quality to be the Best.

THE AMERICAN CLAY MACHINERY CO.
BUCYRUS, OHIO, U. S. A.

We Manufacture Everything a Clayworker Needs.

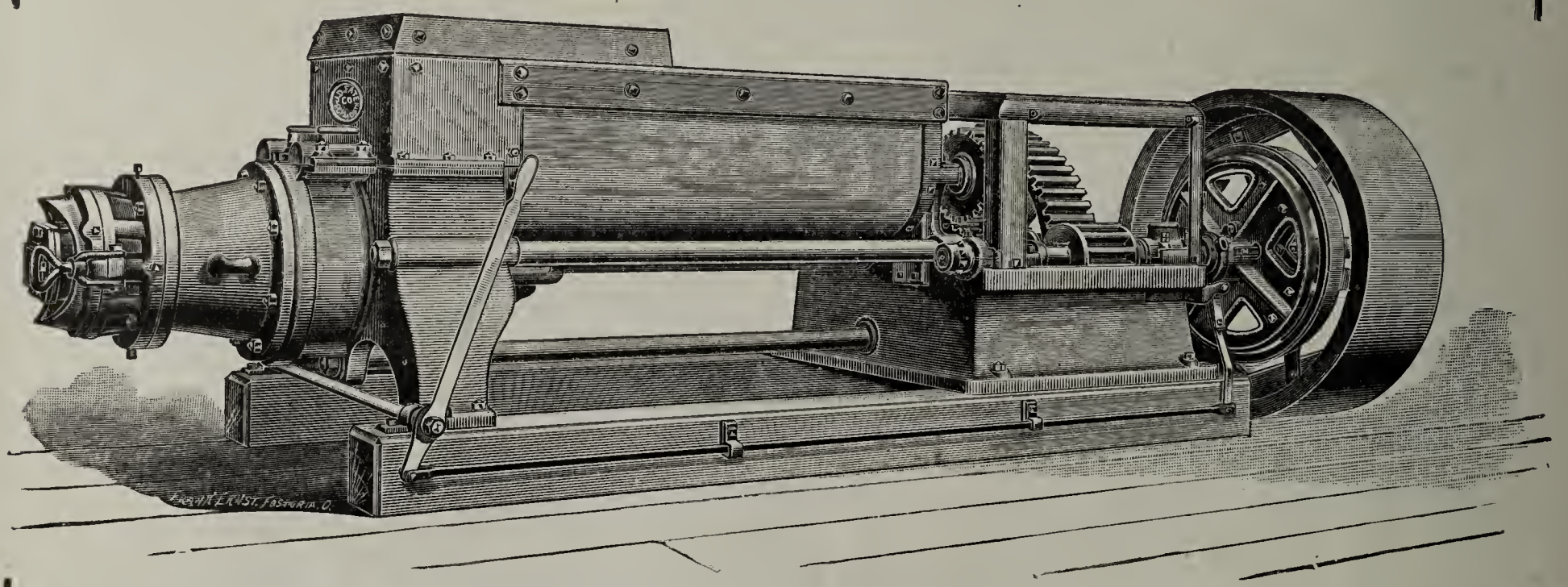
Write for Catalogue.

THE "PREMIER"

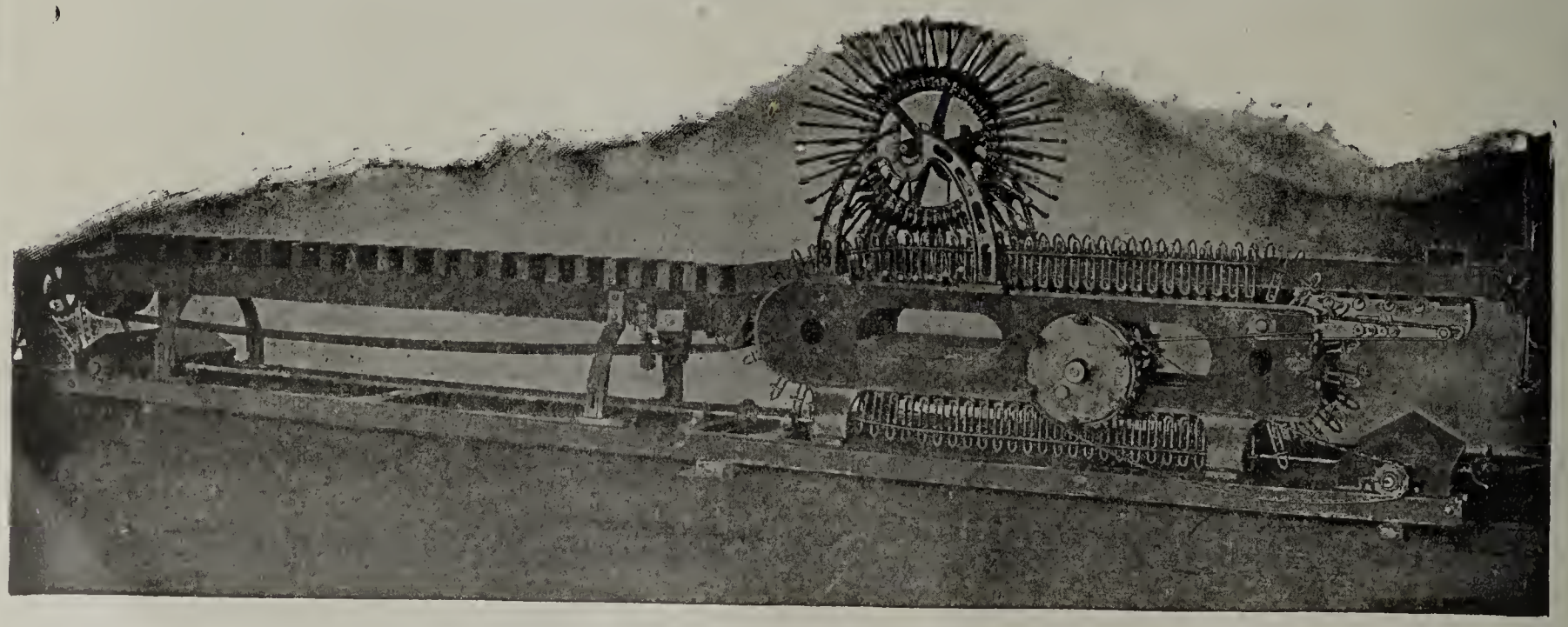
Combined Brick Machine

THE PREMIER LINE — THE J. D. FATE COMPANY

THE LARGEST LINE OF AUTOMATIC CUTTING TABLES IN THE WORLD



WITH BENSING'S AUTOMATIC SIDE-CUT BRICK TABLE.



Make a combination of Brick Machinery which is pronounced by practical brick makers to be the most perfect arrangement of stiff mud machinery now on the market.

It is unequaled for strength, durability, capacity and quality of ware produced.

Write us for catalog and full particulars of the "Premier" line of Clay Working Machinery.

THE J. D. FATE CO., = Plymouth, Ohio

WESTERN REPRESENTATIVES:

B. E. LA DOW, 701 Dwight Bldg., Kansas City, Mo.

Pacific Coast: LEW THORNE, Grand Hotel, San Francisco, Cal.

CLAY RECORD.

Vol. XXVII. No. 5. CHICAGO, SEPTEMBER 15, 1905. Semi-Monthly, $1.00 per Year Single Copies, - 10 Cents

JOHN B. ROSE'S BRICK BROKERAGE HOUSE IN NEW YORK.

The largest brick brokerage house in the world has its offices and wharves at the foot of Fifty-second street, New York city. This firm, the John B. Rose Co., presided over by Mr. John B. Rose, a young man who left college not so many years ago, was established in 1902. In 1904 it handled as many as 400,000,000 brick; and as the Hudson River output promises a very considerable increase for the year 1905, there can be no exaggeration in putting the estimate of the company's dealings for the current year at half a billion, which will be drawn mainly from the Hudson River yards. The New York State brick handled by this corporation is supplied not only by the great yards as far up as Cohoes and Mechanicsville, but also, through the canals. from points above Albany. The firm also represents important plants in the States of New Jersey, Delaware and Connecticut. No fewer than 130 barges and ten sailing vessels are engaged in conveying brick over the great inland waterways to the market, the barges having an average capacity of 300,000 brick, the schooners 80,000.

Such phenominal growth during the brief space of this firm's existence has, of course, its special cause as well as the many general causes in details which naturally contribute to business success. The John B. Rose Co. has made a special point of supplying its customers with information as to the state of demand and supply in the market, and its circular "To the Brick Manufacturers of the Hudson River and Hackensack," with detailed report of the supply on hand at the beginning of the year, is accepted with implicit confidence by the most experienced and successful business men in the brick interests as a guide. This document refers to a social affair following a meeting of manufacturers representing an output of over 600 million brick annually, and which gathering was called a "Pow Wow, or Hot Air Convention." Here the cares of business were cast aside and verbal "brickbats" hurled good-naturedly at each other's heads. These features of the company's methods have necessarily proved attractive, but much of its popularity results from the reputation of its six expert sellers, and the knowledge that one of its officers gives his whole time to the distribution of the product as it reaches the market. In this way the manufacturers, to whom quick discharge of barges is of scarcely less importance than the securing of the highest market prices could not be better served than by this great commission house.

An interesting example of that attention to details in which this house so far excels all others is to be seen in the provision made at the New York office for the convenience of manufacturers and others engaged in the business and of barge captains. Here two sets of commodious and completely fitted rooms are maintained, one for the manufacturers, who find it an excellent place for business discussion, the other for captains. Literature and every kind of convenience are here provided for the visitors. The firm sell brick on a banking basis, and transact a banking business for brick manufacturers. They also do a large business in brick manufacturers' supplies such as yellow and red ochres, coal dust, machinery, lubricating oils, paints and deck varnishes.

Of John B. Rose, the president of the company, something has already been said. The treasurer, George S. Shultz, has charge of the enormous sales of the company. Mr. Shultz has been for 37 years engaged in the business of selling brick, and is one of the most successful salesmen in New York city. William R. Pitts, vice-president, formerly a brick manufacturer, has likewise been successful in the selling of brick for the past 20 years, and by his absolutely fair methods has endeared himself to sellers and buyers alike. Mr. Isaac M. Purdy, assistant treasurer of this company, formerly of the firm of Purdy & Pitts, enjoys a similar reputation as an operator, and for about the same length of time, or 20 years. Mr. Purdy has entire charge of placing the cargoes, settles any and all disputes, and facilitates in every way the dispatch of boats. Robert T. Boyd, the secretary, another

successful salesman, has served in the important capacity of private secretary to Mr. Rose in Roseton, and also in New York, for the past eight years. He is an able lieutenant in executing the orders of the president.

The John B. Rose Co. bids fair to eventually bring about a general consolidation of all the common-brick manufacturers in this section of the country. Succeeding to the business of the Manufacturers' and Agents Consolidated Brick Company, which perished through the obnoxious "rebate" system, it has already effected a most desirable improvement in the feeling between buyer and seller. Up to the present the list of manufacturers whose output it handles comprises the following: Allison, Wood & Allison, Haverstraw; B. J. Allison & Co., Haverstraw, N. Y.; Allison & Wood, Haverstraw, N. Y.; L. H. Brocket, North Haven, Conn.; Cary Brick Co., Mechanicville, N. Y.; Champlain Brick Co., Mechanicville, N .Y.; Central N. E. Brick Co., New Britain, Conn.; D. J. Curtis, jr., Hartford, Conn.; Harry Corse, Glasco, N .Y.; Corwin & McCollough, Coeymans, N. Y.; Dempsey-Gabriel Brick Co., Albany, N. Y.; Dennings Point Brick Works, Fishkill-on-Hudson, N. Y.; D. DeNoyelles & Co., Haverstraw, N. Y.; Excelsior Brick Co., Haverstraw, N. Y.; East Windsor Hill Brick Co., East Windsor Hill, Conn.; D. Fowler, jr., Co., Haverstraw, N. Y.; Everett Fowler, Haverstraw, N. Y.; Ferguson Brick Co., Troy, N. Y.; Eugene Frost, Croton-on-Hudson, N. Y.; Ed. Furman, South River, N. J.; Philip Goldrick, Saugerties, Route No. 4, N. Y.; Jas. W. Gillies, Hackensack, N. J.; M. B. & L. B. Gardner, Hackensack, N. J.; T. E. Gardner, Hackensack, N .J.; Matthew Gormley, Haverstraw, N. Y.; Garner Brick Works, Haverstraw, N .Y.; Hudson River Brick Mfg. Co., Verplancks, N. Y.; The Hutton Co., Kingston, N. Y., Station R; M. M. Hayden, Newburgh, N. Y.; Robert Kent, Glasco, N. Y.; Lynch Bros., Haverstraw, N. Y.; Wm. Laney, Fishkill, N. Y.; Mehrhof Brick Co., Little Ferry, N. J.; Philip Mehrhof, Little Ferry, N. Y.; Nicholson & Sons, Haverstraw, N. Y.; Nicholson & Reilly, Haverstraw, N. Y.; A. W. Pettit & Co., New Brunswick, N. J.; The Rose Brick Co., Roseton, N. Y.; J. Roberts, Troy, N. Y.; Ryan & McFarran, Newburgh, N. Y. (Newburgh Bridge Co.); Chas. A. Shultz, Est., Rondout, N. Y.; A. S. Staples, Rondout, N. Y.; Ed. Schmultz, Hackensack, N. J.; Snedeker Bros., Haverstraw, N .Y.; Sayre, Fisher & Co., Sayreville, N. J.; M. E. Turner, Fly Mountain, N. Y.; The Tuttle Brick Co., Middletown, Conn.; The Troy Brick Co., Troy, N. Y.; Wood & Allison, Haverstraw, N. Y.; U. F. Washburn & Co., Haverstraw, N. Y.; Washburn & Fowler, Haverstraw, N. Y.; Westfield Brick Co., Westfield, Mass., and the Newburgh (N. Y.) Brick Co. (Sand Lime brick).

HOLDS THE WORLD'S RECORD AS A BRICKLAYER.

William T. Eby, Detroit Mich., holds the world's record for number of brick laid in one day, 8,000. He lays an average of 5,000 brick per day, and works so fast that he is able to command $1.00 an hour for his services.

A COURSE IN CLAY AT THE UNIVERSITY OF ILLINOIS.

The University of Illinois, at Urbana, is to inaugurate, the coming fall, a course in ceramics as a part of the regular work of the institution, and the legislature has recognized the enterprise by making an appropriation. Under the general guidance of Professor Charles W. Rolfe the work will be divided into two parts. The physical side will include the examination of the physical properties of the clays and their treatment. The chemical-technical side will have to deal with the preparation of the clays for commercial use. Which of the Illinois clays are the best, and for which purpose are the several clays most suitable? What methods are the best for the preparation of the different clays, and what progress may still be made? These are a few of the problems that the new department will undertake to investigate.

The object of this movement is primarily to provide for the youth of the state who desire, an opportunity to acquire proficiency in this branch of technical work. Another object to be gained is the better understanding of the clays whose commercial value forms such a prominent feature in the wealth of the state. Illinois ranks among the first states in the union in the manufacture of pottery, and this new departure of the state university is another plan on the part of the institution to serve the interests of the people whose generosity is the university's prosperity.

Scholarships to be granted for this, as well as for other departments of the university, will render the advantages of the department available for all.

HAULING BRICK BY TEAM ACROSS THE COUNTRY.

The Sunset Brick and Tile Manufacturing Company, Santa Monica, Cal., which has the contract for 600,000 vitrified brick to be used in the Los Angeles storm drains, is delivering this order from its works on Twenty-sixth street to Los Angeles by wagon. This the company says it is forced to do because of the excessive freight rates charged by the local railroad companies.

The rates on vitrified brick have recently been raised 50 cents a ton, and as 1,000 brick weigh three and a half tons, makes an increase of $1.75 a thousand brick.

The contract made by the company was closed before this new rate went into effect. Efforts are being made to compromise with the railroads.

$33.00 TO THE PACIFIC COAST.

Chicago, Milwaukee & St. Paul Railway.

$33, Chicago to San Francisco, Los Angeles, Portland, Seattle, Tacoma, and many other points on the Pacific Coast. Every day until October 31. Double berth in tourist sleeper, $7. Descriptive folder free. Choice of routes via the Chicago Milwaukee & St. Paul Railway.

F. A. MILLER,
General Passenger Agent,
Chicago.

CLAIM TO MAKE THE BEST BRICK IN THE WORLD.

One of Anaconda's industries—started originally as an auxiliary to the great smelting plant, but now an important business in itself—is the brick manufacturing establishment of the copper company. The yards of this concern were started on a comparatively small scale, the intention being to manufacture brick for the smelters and for local building purposes. At that time the surpassingly fine quality of the clay that is found in the pits and beds around Anaconda was not realized; it was not until practical tests had demonstrated that there is no finer fire clay in the world than that which occurs in the vicinity that the plant was developed to its present important position in the industrial life of the Copper city.

There is no clay in the world that produces such durable and heat-resisting brick as those that are turned out at the Anaconda yards. The silica brick made here surpass the celebrated Swansea brick, formerly used in the Anaconda smelters, for durability; their heat-resisting qualities are far above those found in any other brick. Of the fire-clay brick the same may be said. They are remarkably lasting and give splendid satisfaction wherever they are used.

The plant has recently been equipped for the manufacture of glazed facing brick, made in special shapes from architects' designs. The use of this class of brick in building work has become general lately, and where they are obtainable architects are anxious to employ them in the ornamentation of business structures, built on steel, according to the modern system. The high grade of the material used in the manufacture of the Anaconda brick insures an excellent quality of this class of brick, and the new departure promises to become an important feature of the industry.

At the Anaconda plant large quantities of red pressed brick also are made, and several million ordinary red brick are always carried in stock at the yards. Much of the Anaconda pressed brick has been used in Montana construction work lately, and it is giving excellent satisfaction. The new Swedish church in Anaconda was built from this material, and its appearance is a good testimonial to the quality of this product of the plant.

Not many years ago it was believed that no smelter could operate without Swansea brick. Millions of them are still imported into this country from the famous old Welsh smelting town. For years they were used in the smelters at Anaconda. This was, as has been stated, before it was understood that in the beds that lie near Anaconda is a clay that produces brick which experienced smelter men say is superior to the celebrated Swansea article. Now the Anaconda plant turns out all the brick used at the Washoe plant and thousands of brick are exported to other smelting towns. Great Falls uses a large part of the Anaconda output and large shipments are made to Salt Lake. The British Columbia and other northwestern fields consume a share of the manufacture of this plant, as well. There is hardly a smelting point in the Northwest that does not obtain some of its lining brick from Anaconda. Experience has demonstrated the high grade of this product and the demand for it has increased rapidly in recent years.

The brick from the Anaconda yards are sold on their merit. The smelters that use them are entirely satisfied with their quality; they are unquestionably the best in the market and the industry which has their manufacture for its foundation is rapidly increasing in importance. The development of the industry has been quiet, but the qualities of the product of the plant are recognized wherever the brick have been used, and the fact that the demand is increasing is evidence that the excellence of the brick is becoming generally known.

The Anaconda plant also sells large quantities of fire clay and silica clay and makes many coke-oven brick. Lately, too, there has been a demand for brick of special shape and for tiles, which are now made here. The industry is one with which many Anaconda people, even, are not familiar, yet it is developing into an industry that in many towns would be heralded as an important and substantial foundation of the industrial life of the town.

J. T. Gunness, who is the manager of the plant, is a man who has had 30 years' experience in the business. He came to Anaconda from Duluth, where he is well known as a successful manufacturer of brick of all descriptions. He is known all through the lake copper region, which he supplied for many years with brick and clay. Mr. Gunness is enlarging the capacity of the plant and is extending its scope and is making it an important factor in the commercial life of Anaconda.

All of the material that is used at the brick yards comes from the immediate vicinity of Anaconda, except the plastic clay, which is received from Armington, near Great Falls. The company has beds and pits above and below the city in the canyon and in the valley, and from these is obtained the high-grade material which is used. The digging of the clay and other raw material affords employment for a considerable number of men. At the yards the plant is complete, but its capacity will be increased as rapidly as possible to meet the increasing demand for the product.

The fact that practically all of the raw material used at the plant comes from Anaconda makes this purely a local institution. The plant is one which adds not a little to the prosperity of Anaconda, and the city should find satisfaction in the fact that the brick produced here are the best in the world. They have stood the severest tests and experts pronounce them the best that are made anywhere.

While the yards were, as stated, originally started as a source of supply for the local smelting plant, the fame of their product has spread until they must of necessity enlarge their capacity in order to keep pace with the demand. They are one of the many industries of the state which, while in a measure dependent upon the smelters and the mines of Montana for their success, have a wider field than is generally realized. A visit to the plant is well worth the while of every Anacondan, and when a man has visited the yards and has seen the extent of the operations there, he will wonder why he never paid more attention to this really important industry that has been developed in the city which is his home.

A STEAM RACK DRYER AND CABLE DELIVERY SYSTEM PLANT.

There is nothing contagious that is so satisfactory as a lively and healthful example of progress and when a case is met it gives pleasure to exploit and the space in which to do so freely given.

On this page the halftone shows the Messrs. Grim Bros. Brick Plant, located at Allentown, Pa. This plant was destroyed by fire some time ago but before the burning material had cooled sufficiently to remove the debris plans had been considered and adopted to rebuild and along lines regardless of expense to equip the new plant with the most modern and up-to-date equipment that skill and experience could devise and money buy.

The first impression of the plant, looking at the "cut," is its compactness. In the background is shown the buildings where the handling of the clay and the making of the brick are going on, and emerging from them comes the cable system (more of this later) which carries the material to the kilns.

The next impression is that there is practiced about that plant "the following of one thing after another," in other words **Order**, and suggested by the "lay-out," and will at once be observed by the experienced man in the business. This much regarding the plant in general, yet we must not neglect the matters of detail, such as the machinery included in the equipment.

Manufacturers in general and the Brick Machinery manufacturers and Brick Makers in particular, the world over appreciate now, as never before, not alone the importance of labor-saving devices, but that the adoption of them has become compulsory and the introduction of them as speedily as possible to meet the conditions confronting them on every side and forced upon them by the labor organizations, if the manufacturers are to exercise any control over and be able to conduct their business along lines at all in harmony with their judgment, which control is imperative if any degree of success is to be hoped for. In this connection we observe that the Grim Bros. installed the "Martin" System of handling and drying soft mud brick with a capacity of 30,000 daily. We are informed this equipment is par excellence labor-saving, and in handling it the use of skilled labor is avoided, and at the same time dispensing with cars, trucks, etc., as the brick are handled from the brick machine through the dryers to the kilns by machinery.

Grim Brothers Brick Works, Allentown, Pa.

Now such a "system" certainly belongs to the class of labor-saving devices and to be regarded as being in the front rank, and unquestionably one of the means of successfully combating the conditions outlined in a previous paragraph. We cannot refrain from emphasizing this point because of its importance to the world of business in general. If the laboring interests shall persist in disturbing organized business as it has in the past the wit of man must be exercised to the utmost limit to devise ways and means to dispense with skilled labor and it can be done and will be done in all directions as the

Henry Marton Brick Machine Mfg. Co., Lancaster, Pa., have done in the direction of handling brick from the machine to the kiln.

There were installed also in this plant for the manufacture of soft mud sand-faced brick the Henry Martin Co.'s equipment including one of their largest and heaviest style "A" Steam Power Brick Machines with Pug Mill, Clay Conveyors and Disintegrator.

From the foregoing facts and descriptions we are justified in regarding this installation one of the most modern and practical for soft mud equipments now in use; besides confirming our judgment that the plant falls easily into the category as an example of progress and is entitled to the consideration it has received.

NEW SYSTEM IN VOGUE FOR RAISING FUNDS FOR POTTERS.

With the first pay in the month of September the new system of collecting the one per cent. assessment becomes operative. This means of creating a defense fund was adopted by the N. B. of O. P. several years ago, and it now amounts to a sum well up in figures. The plan was opposed to some extent when first inaugurated, but just as soon as the real significance and advantage of having such a fund was made plain to the rank and file of the Brotherhood, it at once became popular and has grown more so every day.

The national officers have encountered some difficulty in the past in the manner of making collections for this fund, and at the recent convention at Buffalo an idea was advanced and after a thorough understanding was had as to its workings the convention adopted it. In every factory in the United States where Brotherhood men are employed, and that practically includes them all, a member to be known as the shop chairman has been elected. He will serve the employes of that particular plant along the same lines advanced by the advocates of the shop local in one particular, and will have supervision over the work of collecting the one per cent assessment.

The law adopted by the convention allows the one per-cent. collectors five per cent. of the money so collected for their work. The shop chairman receives three per cent. for himself and distributes the remainder among sub-collectors if any are necessary. The new system goes into effect at East Liverpool and Trenton within the next two weeks, and will be gradually taken up in the outside shops as soon as practicable. The new system will involve a vast amount of work, and will add to the duties of the two national officers materially. However, they expressed their willingness to take it up, knowing that the system would be improved and the fund increased.

NEW ROUTE TO LOS ANGELES.

Daily Tourist Cars via the Salt Lake Route.

Through tourist sleeper to Los Angeles leaves Union Passenger Station, Chicago, 5:15 p. m. every day. Route —Chicago, Milwaukee & St. Paul Railway, Union Pacific and the new San Pedro, Los Angeles & Salt Lake Railroad. Rate for double berth, Chicago to Los Angeles, $7.

F. A. MILLER,
General Passenger Agent,
Chicago.

THE McALESTER BRICK CO.'S PLANT COMPLETED.

The McAlester Brick Company, South McAlester, I. T., has just completed a new down draft kiln with a capacity of 100,000 brick, and work has begun on another kiln of the same kind with a capacity of 280,000 brick. A new 100 horsepower boiler, a new repress and a new dry dirt shed 60x100 is now being installed. All of the old kilns are being repaired and the plant is being reroofed so that the rains will not hinder the work. The plant will have a capacity of 60,000 brick a day. Just as soon as the improvements have been completed work will be commenced on new kilns and the capacity of the plant will be doubled. The quality of the brick has been improved fifty per cent and the plant is now capable of manufacturing the best vitrified and building brick in the country. The manufacture of vitrified brick began August 10. The company has a fine vein of fire clay and will also begin the manufacture of fire brick. Over 100 carloads of fire brick are shipped into this city every year.

The company is receiving orders for brick amounting to five times the present capacity of the plant and a large force of men will be employed the year round. It is impossible for the company to keep pace with the demand for vitrified and building brick which comes from all portions of the two territories and Texas. The company will spare no expense in making its plant one of the very best in the country.

COMPANY LAYING OUT EXTENSIVE WORKS NEAR CATSKILL.

The center of the brickmaking industry on the Hudson may be shifted from Haverstraw to Catskill, N. Y. The United States Brick Company, which owns plants in Reading, Pa., Baltimore, and Buffalo, has purchased the large Catskill Shale Brick Works, and obtained options on clay and sand lands extending from Catskill to Alsen, five miles.

Surveyors are laying out a new plant which will furnish employment to more than 1,000 men and turn out 1,000,000 brick a day. In connection with the Shale Brick Works this will be the largest brick plant in the world.

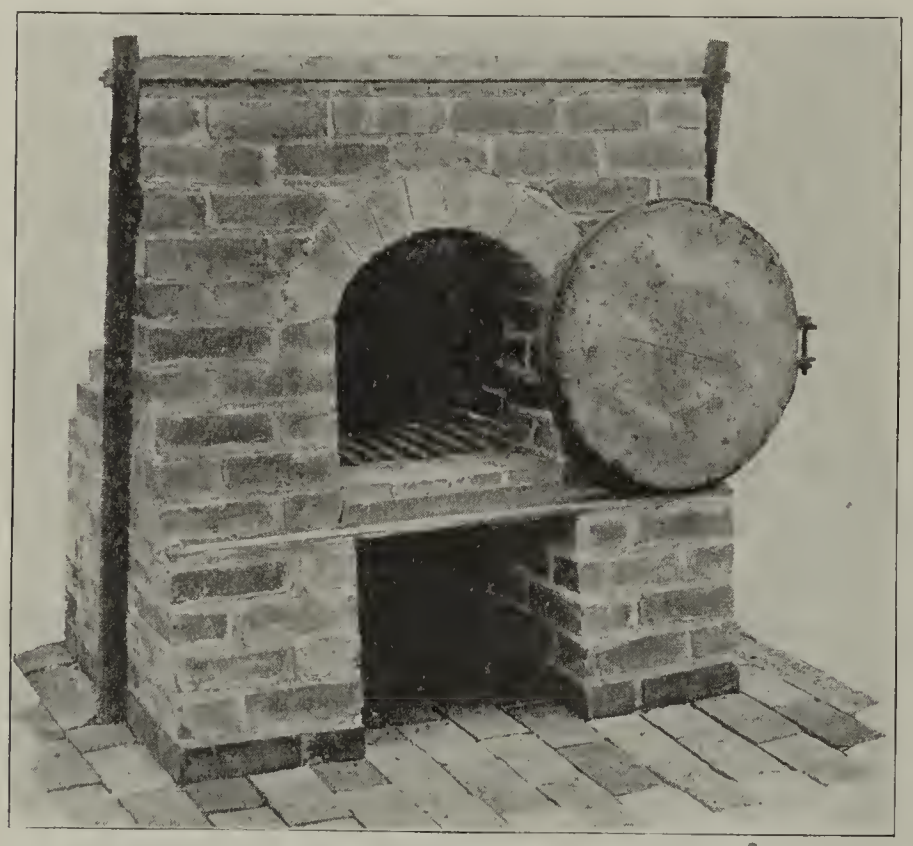
NORMAL RATES RESTORED BY ALL LINES.

Normal rates have been restored by all lines between Chicago, Buffalo, New York Boston and other Eastern points, and the Nickel Plate Road is still prepared to furnish strictly first-class service between Chicago and the East, in their three daily through trains to New York and Boston, at rates as low as obtained by any other line. Meals served as you like, in the dining car, either A la Carte, Club or Table de hote, but in no case will a meal cost more than One Dollar. Our rates will be of interest to you, and information cheerfully given by calling at No. 111 Adams Street, addressing John Y. Calahan, General Agent, No. 113 Adams St., Room 298, Chicago, or 'phoning Central 2057.

SOMETHING NEW IN A FIREBOX DOOR.

The accompanying illustration will bring to the minds of all our readers, especially those who have had experience with cast iron doors for kiln furnaces. That in this new idea of Dunlap's rolling door a feature that is worthy of consideration.

This furnace front is simply plain brick work, the casting across the front binds the furnace together, also sustains a course of fire-brick for a dead plate and a base for rolling the door. This door is made of a combination of fire-clay and other material especially for the purpose and is made in a circular form so that a band or tire can be put on which prevents it falling prey to expansion and contraction caused by the excessive heat and elements of the weather.



A New Firebox Door for Brick Kilns.

This door is very cheap to install and maintain. It is the product of the Dunlap Mfg. Co., of Bloomington, Ill., who are the well known manufacturers of the Perfect Clay Screen, and there is no doubt that this door will prove as good and efficient as did the Perfect Clay Screen. At least a trial of this door will be very inexpensive, and hardly a firm who uses doors will fail to give it a trial.

EXTINGUISHED FIRE BY USE OF CLAY.

To use clay and cinders instead of water to extinguish a fire was the unique experience of the members of the Appleton, Wis., fire department.

It was shortly after 4 o'clock recently when the department was called to the plant of the Fox River Grease Company, in the flats, and discovered that the grease in a large iron kettle was in flames.

It would have been useless as well as dangerous to throw water on the burning grease, so some of the members of the department carried clay and cinders in the building and smothered the flames, while others threw water on the building to keep it from burning.

A NEW TERRA COTTA PLANT FOR BRADFORD.

A meeting of those interested in the new terra cotta company was held in the office of W. L. Goeltz at Bradford, Pa. Besides local capitalists interested, Mr. Goeltz has secured as members of the company a number of the most expert terra cotta workers in the country who will be in charge of the several departments, and, as members of the company, will see that everything is carried out in a manner according to the plans to be followed by the company. It was decided to erect a plant to cost, when completed, $40,000. This plant will be built soon according to the designs made personally by Mr. Goeltz, and will be the model plant of the kind in the United States. The topographical location of the plant and the use of gas as fuel give opportunities to build a plant in Bradford that would be practically impossible elsewhere. The plant will be located at the junction of the B., R. & P. and the B., B. & K. tracks. The building will be practically square and will cover an acre of ground. Every department will be contained in the one building, which has been arranged to be the most convenient factory of its kind now in operation. The creek side of the lot is higher by a number of feet than the track side. On the creek side will be the clay ageing and pugging pits. The clay will be elevated from there onto a floor which will be on a level with a car floor on the tracks. The movement of the raw clay will be from east to west all on one floor all the time—from the pugging pit in its raw state to the car floor as a finished product. The plant will contain five kilns—two down-draft direct-heat burning kilns, one muffled heat burning kiln for special ware, one frit kiln for glazed ware, and one trial kiln. The two larger will have capacity of ten tons minimum to 16 tons maximum daily capacity as against a four ton maximum capacity of the Lewis Run plant. Although the capacity is four times greater than at the old plant, it is expected that only twice as many men will be needed on account of the saving in time that will be made on account of the convenience of the building and new divisions of labor which will be made possible in the model building. It is expected to be completed before snow flies and will give employment to about 80 men.

WILL DEVELOP CLAYLANDS IN PENNSYLVANIA.

The Perry Manufacturing Company, with a capital of $50,000, is the name of a new corporation that has undertaken to develop a peculiar and valuable mineral tract of land at Perryopolis, Pa., which has attracted no little attention. The tract consists of 26 acres, and on it are clays for the manufacture of cores in tube and pipe casting; clay for daubing coke oven doors; a four-foot layer of potters' clay; a four-foot layer of silica rock for the manufacture of fine brick; a four-foot vein of coal and then a layer of molder's sand. The company proposes to develop all of these deposits and is already shipping material out of the tract.

PROSPERITY AT HACKENSACK, NEW YORK.

Business has not been as lively in a decade as it is this year in the extensive brick yards upon the Hackensack river, comprising those at Hackensack and Little Ferry, N. J. For several years past dullness has characterized the business in this vicinity, but this season the market has been good ever since spring opened and today it is almost impossible to keep up with the orders which are poured in from all consuming centers.

The season opened with brick selling at $10.00 per one thousand at the yard. It has not fallen below $6.50 for best brick this season. It isn't so long ago that it has been forgotten that brick sold at $3.50 and $3.75 at the yards. One manufacturer said that he should recoup all his losses this year and have a surplus for profits.

Every yard is filled with brick and the burnings are cleared out about as rapidly as they are finished. Transportation is by both rail and water, water principally in summer, rail in winter, though comparatively few are delivered in winter. They are held at the yards to hurry the market in the spring as soon as navigation opens.

There are about a dozen plants making brick along the river, all drawing clay from the same inexhaustible beds. Some beds are getting deep, adding to the expense of securing raw material, but there is no end to the quantity in sight.

Several owners have uncovered additional clay this year and are now working it up in the yards. If the same degree of prosperity continues next year it will be necessary to build new yards or make important additions to keep up with the orders.

All through the East the price of brick and the demand for them is regulated almost entirely by the demand in New York, which is regulated by the condition of building operations. New York has suffered severly from strikes during the past year or two up to this season when by an agreement signed last year the builders continued at work. The result has been the greatest building boom known in years. Hundreds of buildings, requiring millions of brick, have been erected, or are now in process of erection. Contracts are being prepared for very many more, which will increase the demand for brick in a great degree. In addition there are the great public works like the subway, and the semi-public works like the Pennsylvania's new terminal, which will cover two full city blocks. It would be impossible to enumerate the enormous demand for brick which is certain to ensue if present conditions are not dislocated by an ill advised strike or something similar.

New York draws for its supplies, first upon Hackensack, N. J., and vicinity, fifteen miles away. The brick can be transported by schoner mostly at a very low rate. Nearly all the manufacturers own their schooners and find plenty of employment for them during the summer. Next New York draws upon the yards along the Hudson river. Some of the best contracts given out go to those yards. But it is compelled to go even farther, and Connecticut yards are laid under assessment for supplies. Some of them are over one hundred miles away. They can't do much because of the fact that the development in Connecticut cities is little short of marvelous, and it has taxed the yards in that state to supply their own requirements. In the Southern portion of New Jersey are other yards which are also laid under contribution and rail and water transportation are both availed of to get the brick to their destination.

Some idea of the demand in New York, and that, too, in entirely new localities, can be gained from the fact that a few days ago thirteen brick barges were moored at the piers at 130th street. The brick were all to be used in construction work in the immediate vicinity, and 130th street is a long ways from the busiest part of New York In fact it is off the Island of Manhattan.

At the same time about half a dozen barges were moored at the 125th street docks on the Harlem river, making substantially twenty barges of brick moored along the 125th street district. Down town there were a large number moored at the different docks on both sides of the city, though the number cannot be accurately stated.

It is estimated by good authorities that New York City will consume 2,000,000,000 brick this year and will require just as many more next season to complete the contracts already provided for. This certainly spells prosperity for manufacturers fortunate enough to be within the demand lines.

BIG BUILDING CONTRACT.

The Merhof Brick Co., of Little Ferry, N. J., has been awarded the contract for supplying the brick required in the construction of the Babbitt soap works at Homestead, N. J. Fifteen million will be needed. The plant when completed will be the largest and best equipped soap works in the world and all the Babbitt products will be made there.

The plant is located on the Hackensack meadows, which heretofore have been considered unfit for even factory sites. The land is covered with water at high tide, but by spending thousands of dollars in driving piles a substantial foundation has been secured. A railroad has been built to the works and water shipment could be utilized with a comparatively small expense for dredging.

It will take nearly a year, it is estimated, to erect the works and put them in running condition.

PERSONALLY CONDUCTED TO CALIFORNIA.

Via the Chicago, Milwaukee & St. Paul Ry.

Leave Union Passenger Station, Chicago, 10:25 p. m., Tuesdays and Thursdays, for Los Angeles via Kansas City, Pueblo and Salt Lake City. Judson tourist car parties via the Chicago, Milwaukee & St. Paul Railway. A comfortable, inexpensive and enjoyable way of crossing the continent. Tickets for double berths, Chicago to California, $7.

F. A. MILLER,
General Passenger Agent,
Chicago.

NEW INVENTIONS THAT ARE OF INTEREST TO THE CLAY MANUFACTURER.

These new inventions are those that are especially of interest to anyone in the line of building materials and their manufacture, or machinery to make them:

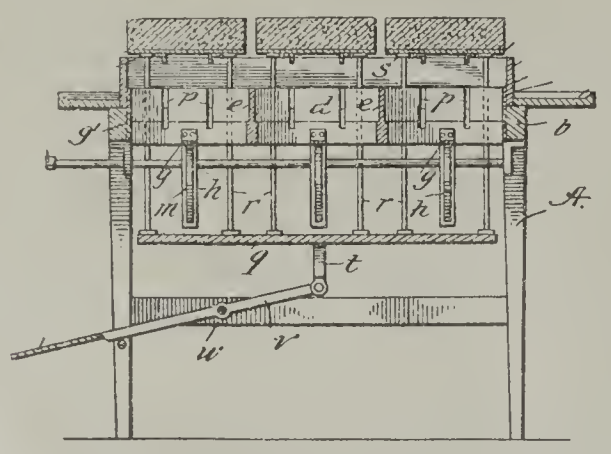
796,459. Process of treating siloxicon to produce therefrom refractory articles, such as brick and the resulting product. Bert Seaboldt, Salt Lake City, Utah, assignor to Chester Thorne, Tacoma, Wash. Filed Jan. 6, 1905. Serial No. 239,944.

Claim.—The process of treating siloxicon to produce therefrom refractory coherent bodies, which consists in mixing with said siloxicon substances competent on decomposition to furnish constituents capable of acting as fluxes relatively to said siloxicon, and raising the mixture to a temperature sufficiently high to decompose said substances and to flux said siloxicon.

The process of treating siloxicon to produce therefrom refractory coherent bodies, which consists in mixing, with such siloxicon, compounds containing alkaline and acid constituents, raising the mixture to a temperature insufficient to crystallize said siloxicon but sufficient to reduce said added compounds and liberate in the mass their alkaline and acid constituents, and further raising the temperature to a point at which said liberated acid and alkaline constituents behave as fluxes relatively to said siloxicon, whereby some of said siloxicon is fluxed and coherence imparted to the mass without crystallizing said siloxicon.

796,939. Brick-Press. Felix Schwerdtfeger, Posen, Germany, assignor of one-half to William Grunan, Enid, Mont. Filed Mar. 7, 1905. Serial No. 248,842.

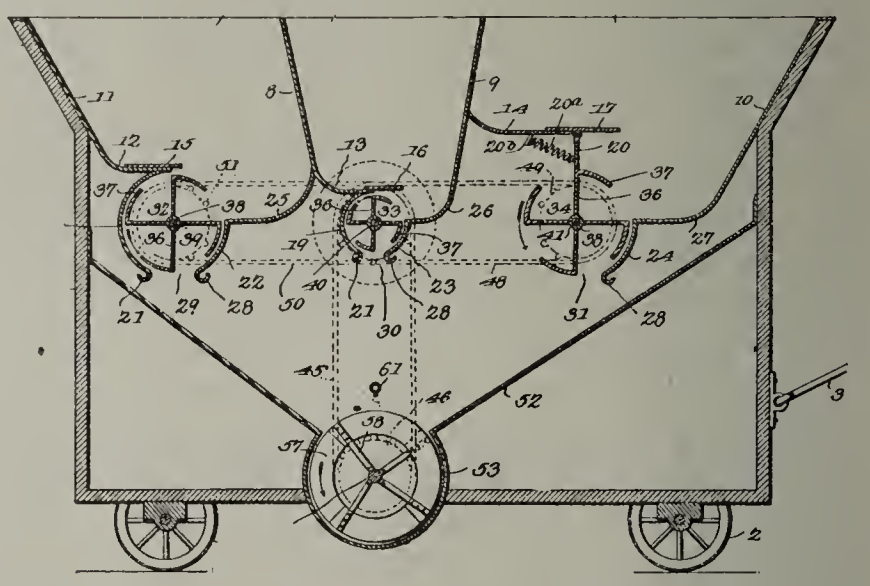
Claim.—In a brick-molding apparatus, the combination of a relatively fixed mold-box, longitudinal and transverse partitions within the mold-box to form molding-compartments, bottom boards loosely supported within the compartments, means for moving some of the walls of the molding-compartments downwardly, and means for moving the bottom boards upwardly above the top edges of the fixed walls of the molding compartments, substantially as described.



In apparatus for molding bricks, the combination of a stationary mold-box, partitions loosely fitted within the box to form molding-compartments, said partitions having vertical slots, bottom boards loosely supported in the compartments, bars fitted in said slots and secured to bottom boards in a plurality of adjacent compartments, means for supporting said partitions and moving them vertically, and means for supporting the bottom boards and moving them together in a vertical direction independently of the partitions, substantially as described.

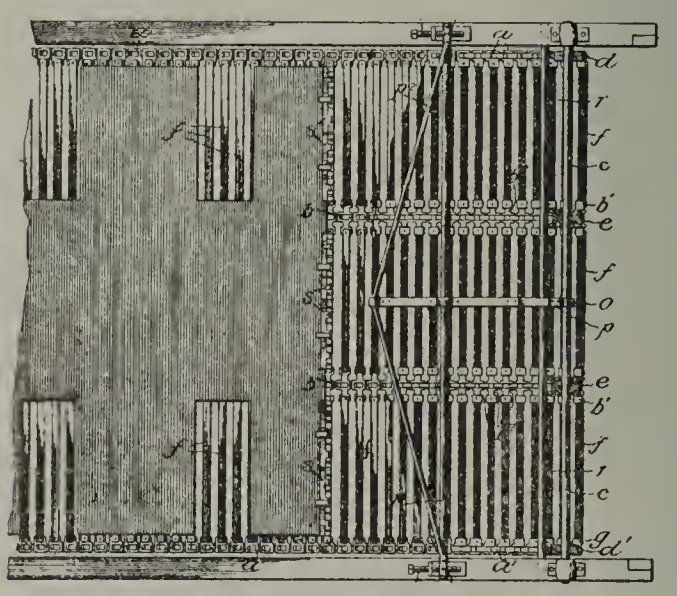
796,591. Concrete-Mixer. William B. Martin, Bloomington, Ill. Filed Oct. 13, 1904. Serial No. 228,309.

Claim.—An apparatus of the class described comprising a casing divided into a plurality of compartments each provided with a shield constituting a throat-piece, rotative measuring devices arranged in the compartments adjacent to the shields and having their shafts arranged in the same plane, and ledges disposed above the measuring devices to cause a side feed of the material thereto.



In an apparatus of the class described, a casing supporting a plurality of different-sized rotative measuring devices, formed into cups each including a cut-off, a spring-pressed check-plate cooperating with the largest of the devices, a chute arranged below the measuring devices, a spout constituting a portion of the chute and projecting laterally from the casing, and a conveyer arranged within the spout and comprising a plurality of reversely-twisted segments, the terminals of which are arranged in break-joint order with relation to each other.

796,947. Conveyer. Eugene A. Thomas, Chicago, Ill. Filed Jan. 7, 1905. Serial No. 240,011.

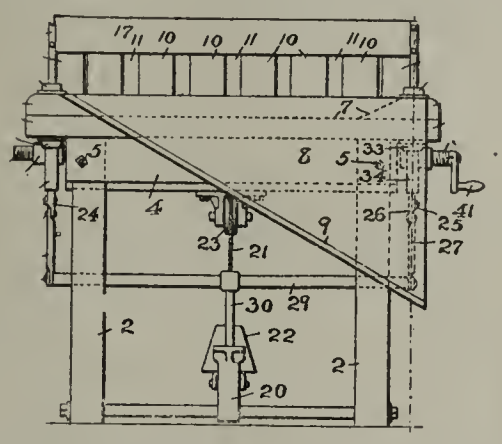


Claim.—The combination with a carrier-chain, of a sprocket-wheel around which said chain is passed, the pitch of the sprocket being slightly less than the pitch of the chain, the links of said chain being constructed and connected in such a manner as to have a corresponding lost motion which is taken up as the carrier turns over the sprocket.

796,640. Molding Machine or Apparatus. James P. Hall, Jersey City, N. J. Filed Oct. 4, 1904. Serial No. 227,122.

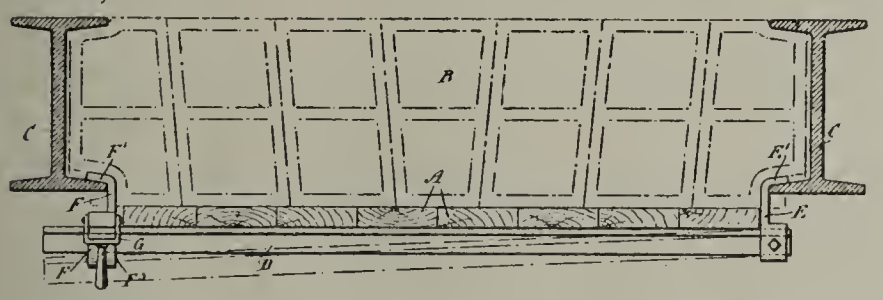
Claim.—In a molding apparatus, the combination, with a supporting bed or table, and a series of pallet-supporting blocks, of a pallet upon each block, a molding-frame upon said table having molding-compartments in each

one of which a portion of such pallet-supporting block and the pallet thereon is arranged, means for retaining said molding-frame in its normally raised position, and means for lowering said frame over said pallet-supporting blocks for simultaneously raising said pallets and the molded material above the compartments of said frame, consisting, esentially, of tubular guides connected with the said bed or table, a set of guide-rods connected with



each end of said molding-frame, each guide-rod extending into and being movably arranged in a guide, a foot-treadle and a connecting-link connection between the said guide-rods and treadle, substantially as and for the purposes set forth.

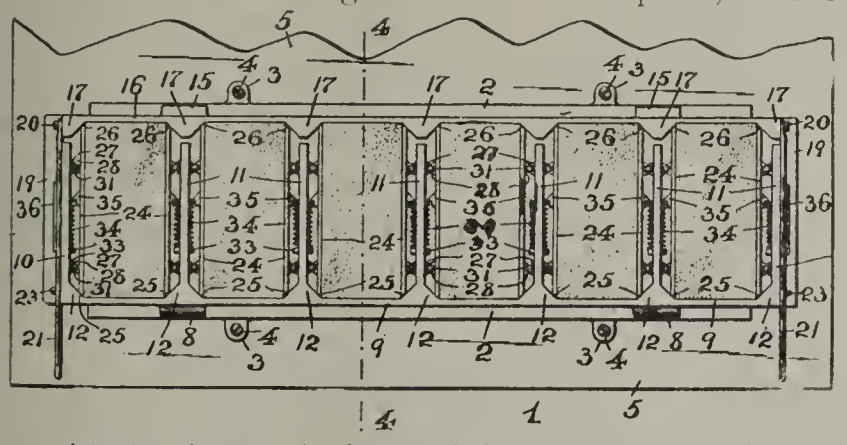
796,777. Support for Floor Construction. Luigi Viezzi. New York, N. Y. Filed Jan. 31, 1905. Serial No. 243,496.



Claim.—A support for floor construction comprising a bar, hangers on the ends of the bar for engaging the floor beams, one of the hangers being adapted to be opened to drop this end of the bar, and a flexible support on the open hanger, for engaging and supporting the dropped end of the bar.

796,638. Molding Device. Frank J. Hall, Jersey City, N. J. Filed Jan. 20, 1905. Serial No. 241,938.

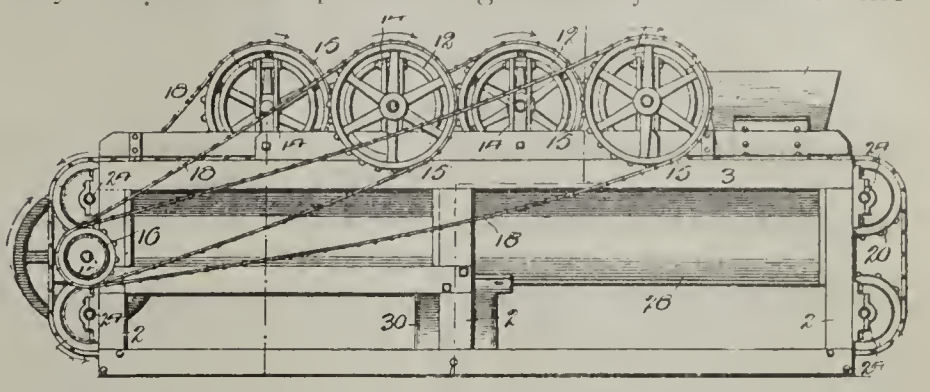
Claim.—In a molding device, the combination, with a base-plate, of a molding-frame upon said base-plate, said frame comprising longitudinal front and rear sides both of which are hinged to said base-plate, and said



front side having end pieces rigidly connected therewith and forming the ends of the said molding-frame, substantially as and for the purposes set forth.

796,639. Clay-Pulverizing and Stone-Separating Machine. James P. Hall, Tuscola, Ill. Filed July 20, 1904. Serial No. 217,429.

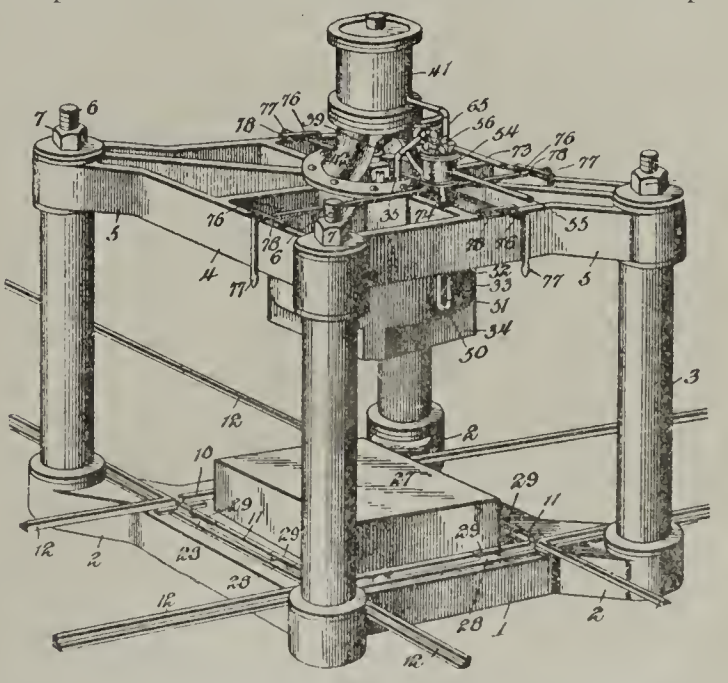
Claim.—A clay-pulverizing and stone-separating machine comprising a frame, a screen mounted upon the frame, an endless conveyor having transverse pulverizing-bars adapted to slide upon the screen and to force hard substances to the end of the screen, guideways mounted upon opposite sides of the screen, bearing-blocks mounted in the guideways and adapted to slide freely therein, and pulverizing-rollers journaled in the



bearing-blocks and normally supported upon the endless conveyor and adapted to work in conjunction with the pulverizing-bars, as set forth.

796,603. Molding-Machine. Joseph B. Ramp, West Burlington, Iowa. Filed May 18, 1904. Serial No. 208,627.

Claim.—In a molding-machine, the combination of a bed-plate provided with four arms or extensions and a central rigid enlargement or support, rails arranged in pairs at right angles to and crossing each other and resting on the bed-plate at the sides of the enlargement or support, four standards mounted on the arms or extensions of the bed-plate outside the rails, a top plate having four arms or extensions connected to the upper ends of the standards, pressing mechanism carried by the top plate and arranged above the said enlargement or support, a carriage adapted to run on the rails under the pressing



mechanism in four different direction and comprising two spaced side members or trucks to run on the rails, and a top adapted to rest on the support or enlargement, and means for yieldably holding the top of the carriage above the said support or enlargement, whereby when the pressure is applied, the top of the carriage will rest upon the support or enlargement, said means being also adapted to automatically lift the top of the carriage from the support when the pressure is removed, substantially as described.

The C. O. Bartlett & Snow Co., Cleveland, Ohio, engineers and manufacturers of elevating, conveying, milling and mining machinery, are now sending out Catalogue No. 15. It is one of the most complete catalogues in the lines that we have ever seen and is an office convenience, as it contains plenty of data, etc., about many things.

CLAY RECORD.

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CLAY RECORD PUBLISHING COMPANY,

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GEORGE H. HARTWELL, Editor.

SUBSCRIPTIONS.

Send One Dollar bill or stamps for United States, Canada or Mexico and one dollar fifty cents for all other foreign countries.

Papers are not stopped at the end of subscriptions unless the subscribers order them so and pay up the arrearages.

ENTERED AT THE CHICAGO POST OFFICE AS SECOND-CLASS MATTER.

Vol. XXVII. SEPTEMBER 15, 1905. No. 5

"I like to read American advertisements. They are in themselves literature, and I can gauge the prosperity of the country by their very appearance."—William E. Gladstone.

When times are dull and people are not advertising is the very time that advertising should be the heaviest. Ninety-nine out of every hundred merchants advertise most when there is least need of it, instead of looking upon advertising as the panacea for their business ills.—John Wanamaker.

It doesn't pay to own anything you can't pay for.

A diplomat is a man who gets his wants by pretending not to want it.

Beware of the man who is excessively polite. He probably wants to make a touch.

Subscribe for the only semi-monthly Clay Journal published in America. It costs you only one dollar per year.

"Even a fool will learn by his own bitter experience, but it is a wise man who profits by the experience of others."

There may be as good fish in the sea as ever were caught, but some how they are shy about swallowing your bait.

When things go wrong some men go down town and get full of "Booze" and most women go up stairs and turn on the briny tears.

Our readers are aware there is a printer's strike "on" here, but perhaps not, and it would not surprise us; because in this strike-ridden city even the "residenter" cannot keep in touch with all the strikes going on. We mention the fact to account to our readers for the delay in getting this issue of the Clay Record to them.

We have no comments to make on the strike further than to say that like every question there are two sides to it; that the regret and misfortune are that it is not possible to employ the principle of arbitration, and without friction, without suspension of pre-existing relations, adjust amicably the differences to the best interests of all concerned.

In these days of cables and wireless telegraphy the nations are acquainted hourly with the happenings everywhere in this wide, wide world. Never before in the world's history have the intelligent masses been so promptly and fully informed, day by day, regarding a struggle between nations at war with each other as has been the fact in the recent contest between Russia and Japan, which bloody and costly conflict is now closed. Peace has been declared and a great load of anxiety lifted from the minds and hearts of the people the world over, and there is rejoicing everywhere over its accomplishment.

In this connection it becomes not an uninteresting question as to the means employed bringing about such a happy result; besides, these means are very suggestive. It is a well known fact that President Roosevelt with the cooperation of the crowned heads of Europe brought tremendous influences to bear on the contending parties, contributing no doubt very materially to the successful outcome of the meeting of the representatives of the belligerent powers. But there was a further influence, more subtle and working as it were under cover which must be credited with having contributed the determining factor in bringing about the conditions forcing the parties to come to a settlement. This influence was the combined efforts of the money kings in Europe and America. It has been often said that "money talks;" that "with money anything may be accomplished." If any one has ever doubted it, he can doubt no longer, and it gives rise to a very serious reflection: That money rules the world in all its affairs, and that its power never so powerful, is growing stronger every day. The world's politics, business, society, yes and religion, too, are absolutely directed, controlled and governed by it. Of course in this instance it may be its influence was for good and deserves praise, but all around us are cropping out evidences where its influence is not for good but for evil and the people are being made to suffer, and taking the matter by far and large there are many things to cause anxious thought for the future if this influence be not in some way subjected to control and regulation.

ACCIDENTS, DAMAGES AND LOSSES.

One man killed and three slightly injured when a brick kiln of the Union Pressed Brick Works, King's Highway, St. Louis, Mo., collapsed. Harry Summerlede, 21 years old, was burried under tons of brick, life being extinct when rescued.

Charles McNabney, who had his hand mangled at the plant of the Terra Haute (Ind.) Pressed Brick Co., has entered suit against the corporation for $10,000 damages.

Frank E. Snyder, president of the Jewell (Ia.) Brick & Tile Co., met with an accident which may be fatal. He fell from the second story of a building, striking on his head and shoulders.

Joseph Dempsey, a wealthy farmer at Jasper, Ind., while loading brick at the kiln was caught by a cave-in and seriously injured.

Five of the employes of the Eldora (Ia.) Pipe & Tile Co. were more or less seriously injured by the breaking of an elevator chain and letting them fall to the bottom.

The Berlin (Ct.) Brick Co. has been made defendant in a suit for $5,000 started by Philip Baiardi, brother of the man who was killed in the Kennington cave-in at the plant.

William Bradley, an employe of the Canal Winchester (O.) Brick & Tile Works, walked in under an elevator used to lower tile from the upper floors and was seriously crushed and injured internally.

The First National Bank has sued the West Market Brick Company, Louisville, Ky., to collect a note of $1,200.

The tile works at Cuba, Ill., owned by George Murphy, were destroyed by fire causing a loss of $15,000.

Geo. F. Sharp, pit boss at the Oskaloosa (Ia.) Paving Brick Co.'s plant, was struck by a sharp piece of shale while tearing down a ledge of clay. His shoulders were sprained and severely bruised.

William Roach asks damages to the amount of $30,000 against the United States Cement Co., Bedford, Ind., claiming that he was injured by an explosion of coal dust.

OBITUARY.

Thomas H. Flood, a retired brick manufacturer of Philadelphia, died at his home in Frankfort, a suburb of that city, August 27th. He leaves a widow and three children.

B. J. Veneklasen, the founder of the Zeeland Brick Company of Zeeland, Mich., is dead. He was 77 years old and started the company nearly 60 years ago. Five sons survive him, all engaged in the brick business.

John Powell, aged 57 years, died at his home at 908 East Church street, Elmira, N. Y. Mr. Powell has operated brick works in Elmira, Alleghany and Havana.

Mrs. Ann Smith, widow of James Smith, for years the owner of a brick yard on Morton St., Albany, N. Y., died at her home after a short illness. Four sons survive her.

FIRE! FIRE!! FIRE!!!

The wooden buildings of the Taylor Brick Mfg. Co., Taylor, Texas, including engine room, clay shed and machinery, were destroyed by fire. Loss, $3,000; no insurance. Plant had been idle as a result of litigation. Peter Schramman was the manager.

The brick and tile factory owned by George H. Little at Littleton, Ill., was completely destroyed by fire. No insurance.

The saw mill and tile factory owned by James A. Furr, Hillsboro, Ind., was burned to the ground, causing a loss of $5,000.

Fire destroyed the plant of the Lehigh Brick & Tile Mfg. Co., at Lehigh, Iowa, Causing a loss of $20,000 with very little insurance. The plant is owned by W. C. Beem.

The W. B. Miller Tile Works, located near La Rue, Ohio, was totally destroyed by fire, entailing a loss of $10,000, with no insurance. It is not likely that the plant will be rebuilt.

PROGRAM OF THE SAND-LIME BRICK ASS'N.

Subjects on which papers will be presented to the Annual Convention of the National Association of Manufacturers of Sand-Lime Products, to be held at Hotel Cadillac, Detroit, Mich., December 5, 6, 7, 1905.

The Scientists' Message to the Sandstone Brick Makers.

The Characteristics of a good Sand and its Proper Preparation.

Lime and its Relations to Sand-Lime Products.

Best Method of Hydrating Lime and Grinding Lime.

Coloring Matter for Sandstone Brick.

Coloring Brick.

The Rotary Press.

The Vertical Press.

Liners.

The Kent Mill.

Tube Mill.

Dry Pan.

Dryers.

Hardening Cylinders.

Sand-Lime Blocks and Appliances for same.

Standardizing Sandstone Brick .

Sandstone Brick from Architect's Standpoint.

Sandstone Brick from Contractor's Standpoint.

Marketing Brick.

It Pays to Advertise.

Insurance. How to construct and handle a plant so as to secure the lowest rate of insurance.

Publicity is showing the Advantages of Sandstone Brick.

Management.

Cost of Sandstone Brick.

Measuring devices.

The Most Approved Method of Manufacturing Sandstone Brick.

BRICK YARD RUSHED WITH WORK.

The Chicago Hydraulic yard at Porter, Ind., began making brick night and day this week. The sand mold department has been shut down, and that gang has been put on the hydraulic night shift. The product of the kilns go directly to the cars, and nothing is stored, orders keeping up with the output. As soon as the night product reaches the kilns additional help will be needed to handle it. The prospects are that the yard will run steadily day and night all winter.

POTTERS FIX WAGE SCALE.

"We have adopted the old wage scale with slight modifications," said George C. Thompson, secretary of the wage scale committee for the United States Potters' Association, at the Hotel Walton, Philadelphia, Pa., just as the committee had adjourned after three days of strenuous work. "The scale is for a period of two years, from October 1, 1905, to October 1, 1907. The agreement is satisfactory to both master potters and operatives.

"It would be impossible to tell you in any intelligible way just what the agreement is more than I have already stated. I have in my hands here about 40 pages of manuscript, which constitutes the new wage scale. I have the task ahead of me of getting it ready to be printed for the use of the masters and the men."

"Did the employes ask for any advance in wages?" the secretary was asked.

"They did," he replied," "and, on the other hand, the employers asked for some reductions. We went over these points together and the settlement is about a saw-off. There is no increase in wages. The wage scale is almost the same as that in effect for two years past. Operatives get from $1.50 to $7.00 and $8.00 a day. Some do piece work and some day work. It is different at different potteries."

T. J. Duffy, chairman of the operatives' committee, speaking for the employes, said that the new agreement was entirely satisfactory to the workmen.

BIG ORDERS FOR BRICK MAKE COMPANIES INCREASE THEIR PLANTS.

Unprecedented business is reported in the building and fire brick industry of the Pittsburg district. The Pittsburg-Buffalo Company has received orders for 6,000,000 brick during the last month and the plant of the company at White Rock is being increased to double the present capacity. The present equipment will turn out 100,000 brick daily.

Some of the principal orders are from the H. C. Frick Coke Company for 1,000,000 brick for additions to the present coke oven capacity; the new Kittanning Brewery, 800,000; the borough of Garrick 1,500,000.

The Harbison-Walker Refractories Company has also entered upon a campaign of rebuilding a number of the present plants and erecting several new ones. The plant at Hays station will be doubled and over 200,000 brick daily can be turned out.

BENTONITE DEPOSITS TO BE DEVELOPED.

Eastern capitalists are looking over the bentonite fields of Wyoming with a view to starting something. Bentonite is a hydrous-silicate of alumina-clay, and is used to give body to high-class soaps, as a packing for a special kind of horseshoe, as a dilutent for certain powerful drugs sold in powdered form. Small quantities are used as an adulterant in candy. The stuff is found in Big Horn, Johnson, Crook, Laramie, Carbon, Natoma, Converse and Albany counties. It is listed at $5 a ton.

BRICK COMBINE AT CLEVELAND BROKEN?

City hall officials were as much startled over what apparently is a breaking of the brick combine of Cleveland as they were the day before by the appearance of what seems to be a coal combine in the city. Brick from time almost immemorial has never been sold to the city for less than $7 a thousand.

Recently bids were asked for the sale to the city of 1,000,000 brick to be used in building meter vaults for the water department. A price of $7 per thousand was expected, but, lo, when the bids were opened the Farr Brick Co. put in a bid of $6.85. Barkwill & Bradley, the only other bidder, asked the usual $7.

SOUTHERN CLAY PRODUCTS.

The total value of clay products last year in the United States was $131,023,248. The value of the products in the South was as follows:

Alabama	$1,289,548
Arkansas	696,582
District of Columbia	306,460
Florida	252,864
Georgia	1,930,936
Kentucky	2,087,277
Louisiana	1,011,478
Maryland	1,872,057
Mississippi	775,494
North Carolina	897,964
South Carolina	732,053
Tennessee	1,435,785
Texas	1,536,097
Virginia	1,736,392
West Virginia	2,074,549
Total	$18,635,516
Total United States	$131,023,248

Ohio led in value of products, $25,647,783, with Pennsylvania second, $16,821,863; New Jersey third, $13,304,047; Illinois fourth, $10,777,447, and New York fifth, $10,543,070. Kentucky, which was first in the South in value of products, was tenth in the country.

ART POTTERY PLANT AT COLUMBUS.

There will, in all probability, be established in Columbus, Ohio, an extensive art pottery plant, which will employ from three to four hundred persons, including a corps of trained artists. C. C. Chamberlain of Buffalo, N. Y., and George W. Evans of Pittsburg, are here in consultation with local people regarding a location.

DETROIT HAS TWELVE BRICK MANUFACTURING CONCERNS.

One of Detroit's biggest building industries is brickmaking, though all the plants are located along the clay banks in Springwells. There are twelve large concerns, which annually turn out 200,000,000 common building brick, the value of this product being about $1,700,000. Moreover, this immense product is marketed within the state, and Detroit of course is the biggest and most insistent customer.

At the present time the demand far exceeds the supply, but modern methods are gradually coming to the rescue by doing away with the open yards and installing a system by which the plants can be operated the year round. Springwells has always been an important brick center, and Michigan now stands twelfth in the production of common brick.

It is not so many years ago that brickmaking was a most laborious task, nearly all the labor having to be done by hand, while the sun was relied upon to dry the bricks. Now big steam shovels are used for digging out the clay and conveying it to the pressing machines. The molds are piled on trucks which are pushed into immense drying sheds, where steam or an air-draft dries them. When dry they are placed in a kiln to be burned. Then they are cooled, after which they are ready for use.

Nature plays an important part in the manufacture of brick, and, as well known, nature cannot be hurried. It would take nearly a month to make a single brick, but the quantity manufactured offsets the length of time required. Some of the big plants are turning out 70,000 bricks a day, which means using up over 170 tons of clay. a pretty big hole in the ground. After a brick is molded three days are required to dry it under steam heat. It is then burned for seven days in a kiln and then allowed to cool for seven days. A kiln of brick is a mammoth affair, containing never less than 750,000 and more often a million brick, as the cost of burning is the same.

Michigan avenue was formerly an endless procession of brick wagons, but this has been done away with. The brick is now loaded into cars and hauled to a convenient distributing point on the belt line, the city being divided into sections for that purpose.

When planning a business or pleasure trip from Chicago to Buffalo, New York, Boston or any Eastern point, you should investigate the satisfactory service afforded by any of the three Express Trains operated by the Nickel Plate Road. Colored porters are in charge of coaches, whose duties are to look after the comfort of passengers while enroute. Special attention shown ladies and children, as well as elderly people, traveling alone. No excess fare charged on any train on the Nickel Plate Road. American Club Meals, from 35 cents to $1.00, served in Nickel Plate dining cars. One trial will result to your satisfaction. All trains leave from La Salle Street Station—only depot in Chicago on the Elevated Railroad Loop. Call on or address John Y. Calahan, General Agent, 113 Adams St., Room 298, Chicago.

POTTERY NEWS ITEMS.

The schedule of the Barberton (O.) Pottery Co., which went into bankruptcy the first of August, has been filed, showing assets $181,495 and liabilities $174,660.

The Pennsylvania China Co., formerly the Wicks China Co., is fast preparing to start there Kittaning, Pa., plant.

The Ford China Co., Ford City, Pa., is now running full capacity.

The Western Pottery Mfg. Co., Denver, Colo., has been incorporated with $250,000 capital stock by Frank R. Ashley, Merritt Gano, George W. Gano, George E. Crawford and Gerald Hughes.

The Shenango China Co.'s plant, New Castle, Pa., will be sold at receiver's sale Aug. 31. E. N. Baer, receiver.

A strike caused by the alleged violation of the working scale of the employers is on at the Universal Sanitary Pottery, at New Castle, Pa.

David C. Richards and associates propose to develop clay lands and establish a pottery at Oliver Springs, Tenn.

The Clark Pottery, at Cannelton, Ky., is contemplating moving its plant to Hawesville. Its manager is now negotiating with the council, to that end.

The Mountain Valley Pottery Co., capital stock $1,000,000, are considering locating their plant at Little Rock, Ark., to develop the pottery clays found near Mountain Valley. The officers are R. E. Bradford, president; W. W. Martin, vice-president; G. R. Alexander, secretary and treasurer. Main office, 854 Century Bldg., St. Louis, Mo.

The North American Mfg. Co., the new company to build a pottery at Newell, W. Va., across the river from E. Liverpool, O., will start with 13 biscuit and 17 glost kilns.

The Harley Pottery Co., Nashville, Tenn., fired its first kiln, and soon will meet its demands for ware.

The Arc-En-Ceil Pottery Co. has changed its name to the Brighton Pottery Co.

The Keyser Pottery Co., Keyser, W. Va., has been incorporated, with $50,000 capital stock, by L. L. Edgell and W. H. Griffith, of Keyser; M. J. Carroll, W. J. Goodwin and M. H. Edgell, of Trenton, N. J.

Boone, Iowa, wants a pottery to manufacture white pottery and the business men are trying to raise $10,000 for same by subscription.

The Bell Pottery Co., Columbus, Ohio, have started their large plant in East Columbus. Several hundred men will be employed as soon as everything gets going good.

T. F. Lavender has bought the pottery near Tuscaloosa, Ala., and will manufacture all kinds of pottery.

The Burley & Winters Pottery Co., Crooksville, Ohio, has been incorporated with $50,000 capital stock by W. N. Burley, Wilson Winters, J. C. Felkenberg, J. G. Burley and E. L. Bennett.

The sale of the Hart Brewer Pottery at Trenton, N. J. was set aside by Judge Lanning at the instance of E. R. Walker, one of the bidders, declaring the sale illegal on account of being sealed bids instead of selling the property at public auction.

SAND OR LIME BRICK OR BLOCK NEWS.

Prof. C. L. Sampson, of Little Rock, Ark., is organizing a company at Jonesboro for the manufacture of sand and lime brick.

The Hydraulic Stone & Brick Co., Milwaukee, Wis., has taken over the plant of the Pick Brick Co., at West Bend, and the capacity will be doubled. They also own a plant of the Silica Brick & Stone Co., at Janesville.

The Keystone Hollow Block Co., Greensboro, N. C., has been organized by Earl & Kelley and they will make blocks at once.

A. S. Walrath, of Minneapolis, and F. S. Wells and others, of Des Moines, Iowa, are forming a company at the latter place to make high grade impervious cement brick.

The People's Binghamton (N. Y.) Pressed Brick Company, owned by Arthur W. Black, O. G. Diefendorf and William F. Donley, are now making brick.

The Steger Sand-Lime Brick Co., of Bonham, Texas, are to build a $100,000 plant at Dallas, Texas.

The Pensauken Brick Co. will install a plant at Palmyra, N. J., after plans of S. V. Peppel, of Louisville, Ky. The officers of the company are Howard C. Walton, president; William S. Darnell, attorney, and Paul Morris, treasurer.

The Composite Tile Co., Raleigh, N. C., has been incorporated with $125,000 capital stock by W. P. Rose, D. J. Rose and S. J. Porter, all of Raleigh.

The Mellville (N. J.) Granite Brick Co. has been incorporated with $50,000 capital stock. Incorporators are Harry C. Bauer, Charles A. Idler and William W. Weeks.

Koffstad & Anderson, Greenbush, Minn., have installed machinery for making cement brick and blocks.

Edgerton & Deyo, St. Augustine, Fla., will put in a plant for making cement brick blocks, etc.

The stockholders of the Jacksonville (Ill.) Sand, Cement & Brick Company have chosen W. H. Cocking, Robert Buckthorpe, Frank Fanning, W. J. Moore, W. W. Gilliam, Luther Smith, and T. H. Buckthorpe as directors.

C. W. Foster has engaged in the making of cement brick and blocks at Elwood, Ind., having acquired the machinery from John F. Rodefer.

The Cement Pressed Brick Co., Benton Harbor, Mich., has been incorporated with $15,000 capital stock. They will move the plant from Lake Station, Ind. B. H. Spencer is president, M. Spencer, secretary and treasurer. Irving Spencer, general manager, John D. Luttrell, superintendent, and William C. Cantrell. They will use the Cantrell & Luttrell process.

F. J. Hanson, Fitzgerald, Ga., has put his plant in operation for making artificial stone of sand and lime.

The Art Stone Co., Miami, Fla., wants prices and catalogues on machinery for making concrete blocks and brick.

M. M. Barnum, Windsor, Mo., has bought land and will build a cement brick and block plant.

N. A. Reynolds, of the French Broad Granite Brick Co., of Ashville, N. C., is considering the building of a duplicate plant near Atlanta, Ga.

MISCELLANEOUS ITEMS.

Aug. 14 the Verdigris Valley Vit. Brick & Tile Co., of Neodesha, Kansas, shipped to Lew Wentworth, of Omaha, Neb., a special train of 23 cars of natural gas burned brick for use in Omaha; 250,000 brick were in the consignment.

W. L. Terhune has purchased from the executors of the Haven estate the brick yard at Sangerfield, N. Y., and has commenced operations. Owen Ruane will superintend the works as in the past.

Endicott, Wash., 20 miles west of Colfax, which was almost destroyed by fire about Aug. 1st, is rebuilding of brick. A brick yard has been established and a large force of men are at work making brick.

George B. Bastian, of Williamsport, Pa., is at the head of a movement to establish a brick manufacturing plant at a shale bank south of Montoursville, Pa.

E. M. Rodrock has bought the property of the Staten Island Clay Co., at Spa Springs, and Perth Amboy, N. J., for $33,000. He was formerly a manager of the plant.

The William N. Burroughs Brick Co., Brooklyn, N. Y., has been incorporated. The directors are William V. Burroughs, Cornelius A. McGuire and John W. Gaylor, of Brooklyn.

W. H. Hill and J. M. Kennedy, Lestershire, N. Y., announce that a building and paving brick plant will be established. The company will be incorporated with $100,000 capital.

The Melville Brick Co., capital stock $50,000, has been incorporated by Wilmington, Del., investors.

F. A. Wear, of Kansas City, Mo., has bought the interest of Dr. L. S. Skelton in the Fredonia (Kansas) Brick Co., and the latter will move to Okmulgee, Ind. Ter., to operate there.

The Tennessee Brick & Tile Co., Dyer county, Tenn., has been incorporated by Geo. E. Scott, J. M. Brukin, E. M. King, Bose Pillow and C. C. Moss.

The Hamburg Vit. Brick Co., Reading, Pa., has received a contract to supply 4,000,000 brick to be used in the construction of the Panama canal.

W. H. Cline of Sunnyside, Wash., has sold his brick making machine to E. B. Johnson, of Brosser, who is putting in a yard at Granger.

W. H. Sipple, Dr. B. N. Stevens and P. F. Romeiser, Chillicothe, Mo., business men, are behind a plan to organize a company to build a plant near the junction of the Milwaukee, Burlington and Wabash railroads to utilize the deposits of shale from Utica.

David C. Richards and associates of Oliver Springs, Tenn., propose to develope clay lands. They have begun to mine and make ware by hand. Modern machinery for mining and manufacture is wanted.

The Austin Pressed Brick Co., Cincinnati, Ohio, has been incorporated with $30,000 capital stock by J. F. Austin, C. M. Austin, Harry Goloblatt, L. P. Austin and O. L. Layne. The plant is in the rear of the Union Stock yards.

The Jacksonville (Texas) Pressed Brick Company has been incorporated with $5,000 capital stock by John H. Felton, F. K. Nance and J. L. Douglas.

The Empire Oil Co., Joplin, Mo., has commenced work on a 100,000 brick daily capacity brick plant at New Albany, Kansas. Vitrified, paving and building brick will be made.

The Indiana Brick & Quarries Co., of Hillsboro, Ind., and Chicago, has been organized with $200,000 capital stock. The incorporators are Frank C. Powers, James R. Powers and C. W. Sandall of Chicago, and H. W. Pentecost of Guthrie, Ill.

It has been discovered that a fine deposit of shale has been found on land owned by Eugene Smith, cashier of the Exchange Bank at Barry, Ill.

The Newkumet Clay & Mfg. Co., North East, M. D., has been incorporated with $12,000 capital stock by George W. Corden of North East, James Mallen 1401 W. York street, Philadelphia, and John A. Newkumet, of Philadelphia.

P. J. Corn, 320 Fifth ave., New York, has plans in progress for a brick and pottery works to be erected at Red Oak Park, N. J. Brick and steel buildings, three stories high 100x200 feet.

The new plant of the Niles (O.) Fire Brick Co., will be ready for operation by the 15th. Twenty thousand fire brick will be made per day.

Drillers for oil at Coweta, I. T., struck fire clay at 20 feet, drilling through about 40 feet of it.

The Burgum Strike-off Machine Co., Pittsburg, Pa., has been incorporated with $5,000 capital stock by William C. Burgum, Harvey L. Francis, William S. Linderman, Andrew Lyle and A. H. Patterson, all of Pittsburg.

The D'Hamis (Tex.) Brick & Tile Co.'s site for their new brick works presents a lively scene. The buildings are being erected and machinery installed.

The Portsmouth (O.) Brick & Tile Co. has been incorporated with $20,000 capital stock by J. W. Smith, John J| Spencer, Levi D. York, Frank V. Knauss and Thos. C. Anderson.

Daniel S. Stone and Fred H. Emerick have purchased from the Lackawanna Steel Co. at Scranton, Pa., a block of land upon which to erect a brick making plant.

William Gilpin has just completed burning a kiln of brick at Dixon, Wyoming, selling same at $7.00 per thousand.

Paul's Valley, I. T., is to have a brick and tile factory. Graham Burnham can give information.

S. T. Dunlap, Juliaetta, Idaho, has ordered a 20,000 daily capacity brick machine and will soon install same.

The Bradley Brick Co., Mooresville, Ind., has increased its capital stock from $10,000 to $25,000. Jesse Bradley, president, S. E. Wooden, secretary.

The Newton-Hamilton (Pa.) Brick & Clay Co. will increase their capital stock so as to enlarge their plant and put in a switch to the railroad. W. W. Wilkie is the new superintendent.

Frank Simmons has bought a half interest in a brick yard at Cumberland, Iowa.

The Martinsburg (W. V.) Brick & Tile Co., capital stock $250,000, has been organized by J. W. Ivery, W. D. Menear, L. W. Bailey, Wm. White, Chas. L. Blissard, of Dillsburg, Pa., and E. F. Milliard, J. J. Hetzel, J. F. Thompson, A. D. Dorby and F. Vernon Aler, of Martinsburg. The main office will be at Martinsburg and the plant near the city.

Charles Smith, Missouri Valley, Ia., has commenced work on his brick yard again and will make one half million brick.

At a meeting of the stockholders of the Malvern (O.) Fire Clay Paving Brick Co., the superintendent was instructed to proceed with the work of installing the plant.

G. E. Golden of York, Pa., and P. E. Iler of Sarpy City, Neb., expect to enlist Omaha capital in the manufacture of brick at Sarpy City.

The Arkansas Brick & Mfg. Co., Little Rock, Ark., are now turning out 170,000 brick daily. This company is the largest brick manufacturer in Arkansas.

The American Sewer Pipe Co. will put in a brick testing machine at its Black Horse works at Cumberland, W. Va., to test all brick made by the plant.

Street Supervisor York of Provo, Utah, will set up a brick machine at Nampa, Idaho, to make brick for the new sugar factory to be built at Nampa.

S. Battershall of Henning, Ill., and Mr. Leavitt of Pocahontas, Iowa, are testing the clays of the latter place for brick and tile.

The Ohio Lumber & Clay Co. opened up a $10,000 plant at Morral, Ohio, for the manufacture of tile and all kinds of clay materials.

The Plant of the New Castle (Pa.) Portland Cement Co., situated in Shenango township, will be ready for operation within a few months.

As a result of the tests of clay found the Washburn (Wis.) Brick & Tile Co. has been organized with $30,000 capital stock. Water power from the Soo river will be used to operate the plant.

The Olive Hill (Ky.) Clay Product Co. has been organized by John F. Hager, F. H. McClung, Wm. Watson, J. B. Eifort and John C. C. Mayo, to develop 8000 acres of clay land which it owns. The main office is in the Blackstone Building, Ashland, Ky.

John Mersinger of Wasco, Oregon, has moved his brick making machinery to Condon.

The North Western Brick Works, Neligh, Neb., were sold by McGimtie & McDonald, the proprietors, to Jos. McKenna of Inman.

J. H. Hunt, Gainesville, Ga., has just purchased the brick plant of the Gainesville Midland Ry., which has been operated under lease by J. M. Hubbard. The plant will be increased in capacity.

J. J. Warrick of Bancroft, Iowa, is looking for a location for a $15,000 tile factory.

The Sexton (Pa.) Vitrified Brick Co. is to be started at Sexton with $30,000 capital stock. The directors are I. K. Little, P. A. Barnett, John Heffner, Dr. C. O. Miller and D. M. Stoler.

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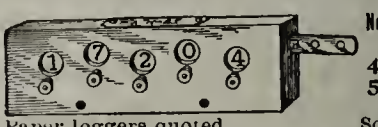

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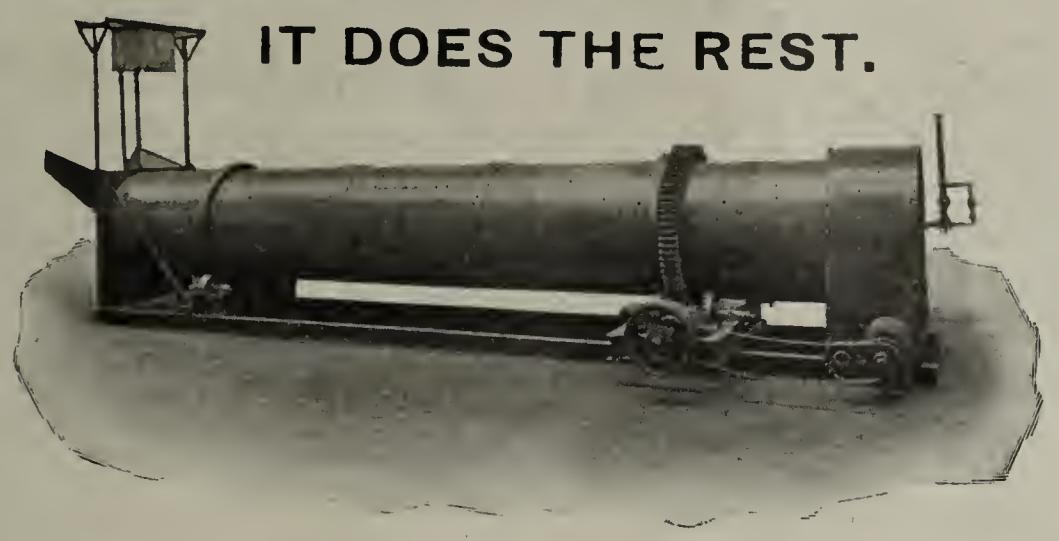

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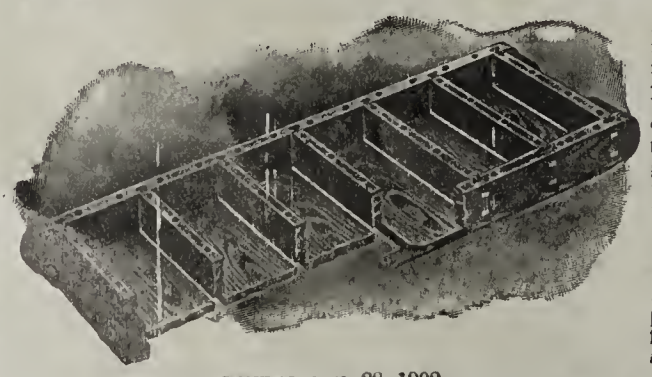

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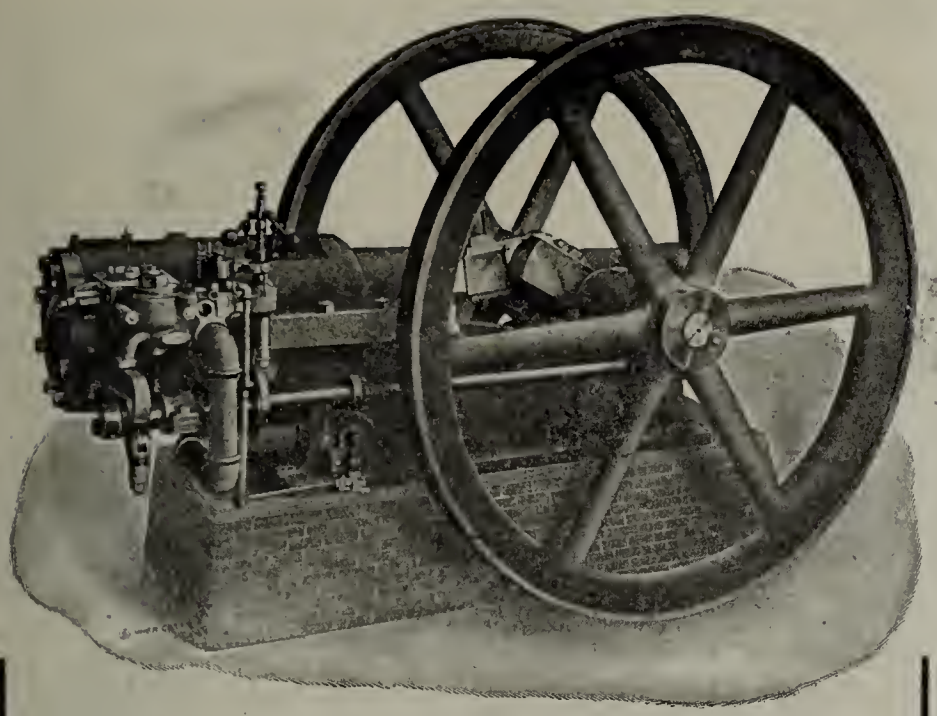

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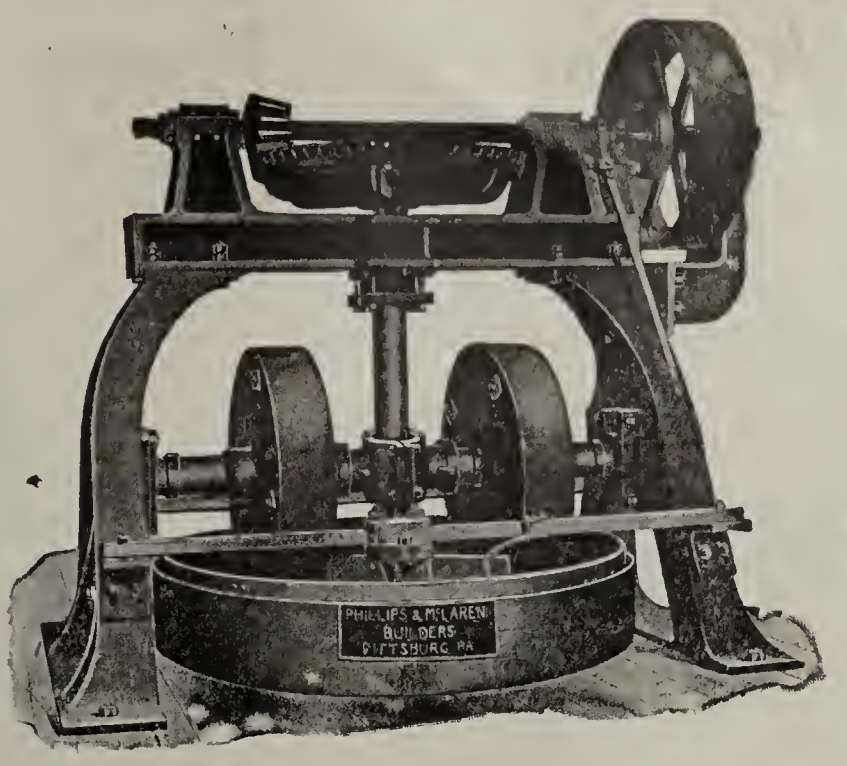

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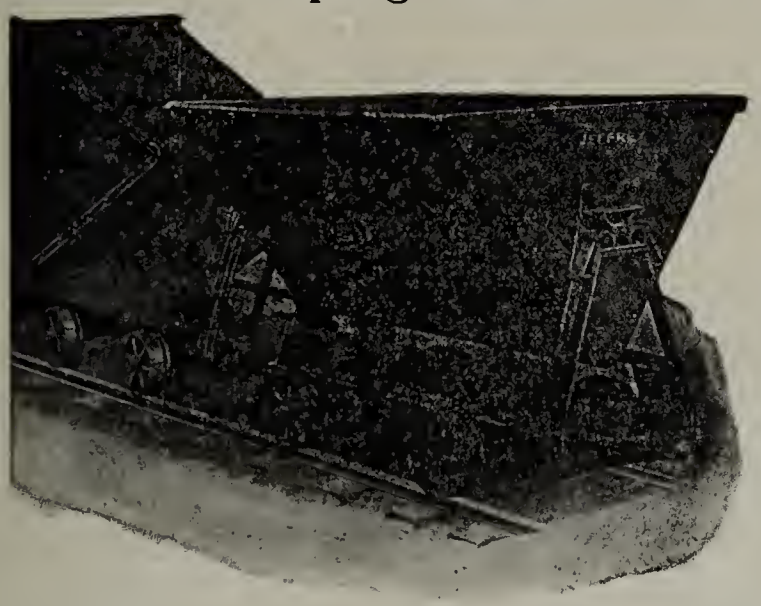

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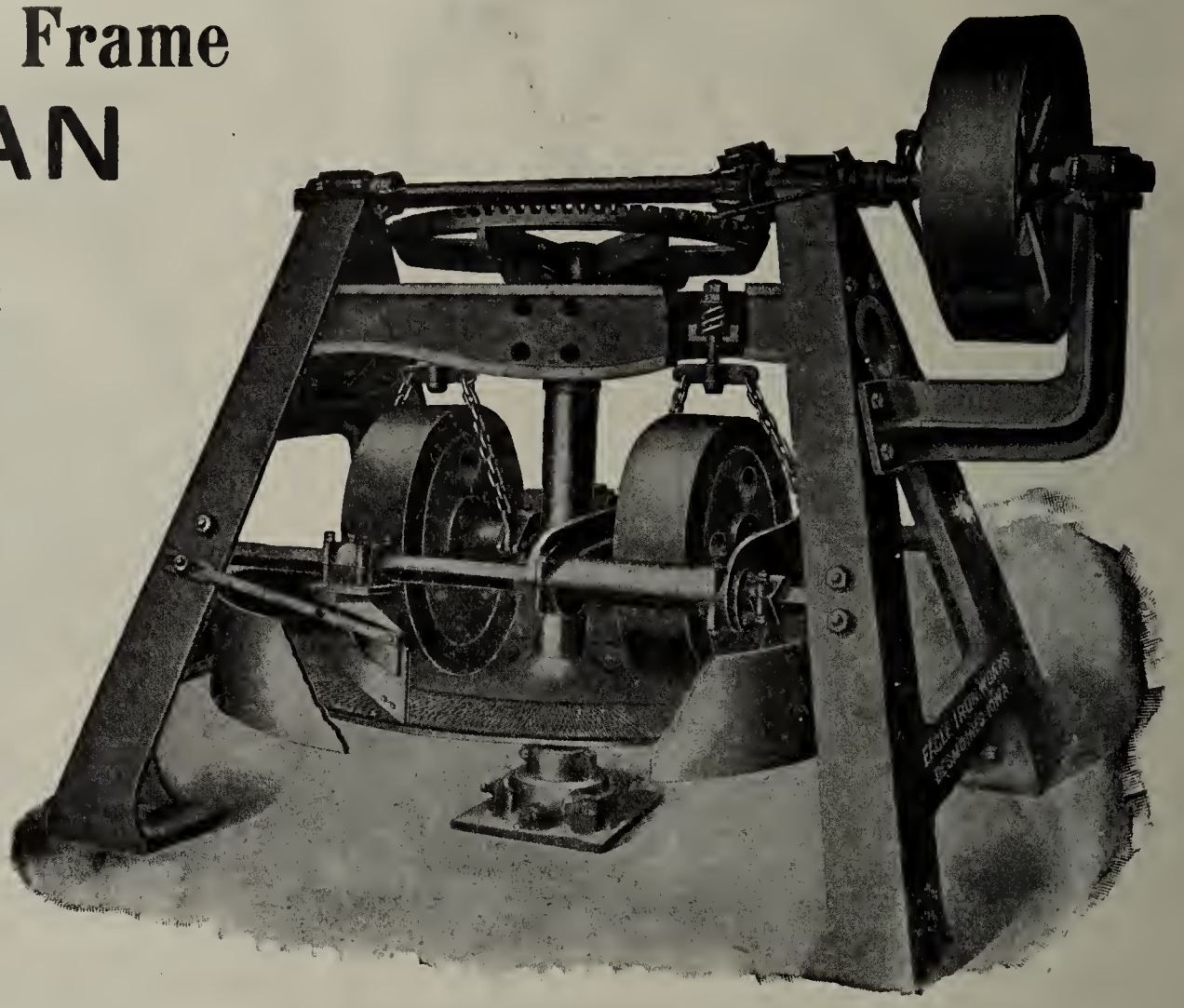

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OUR RECORD: Combined capacity of factories in 1903, 15 million bricks per annum.
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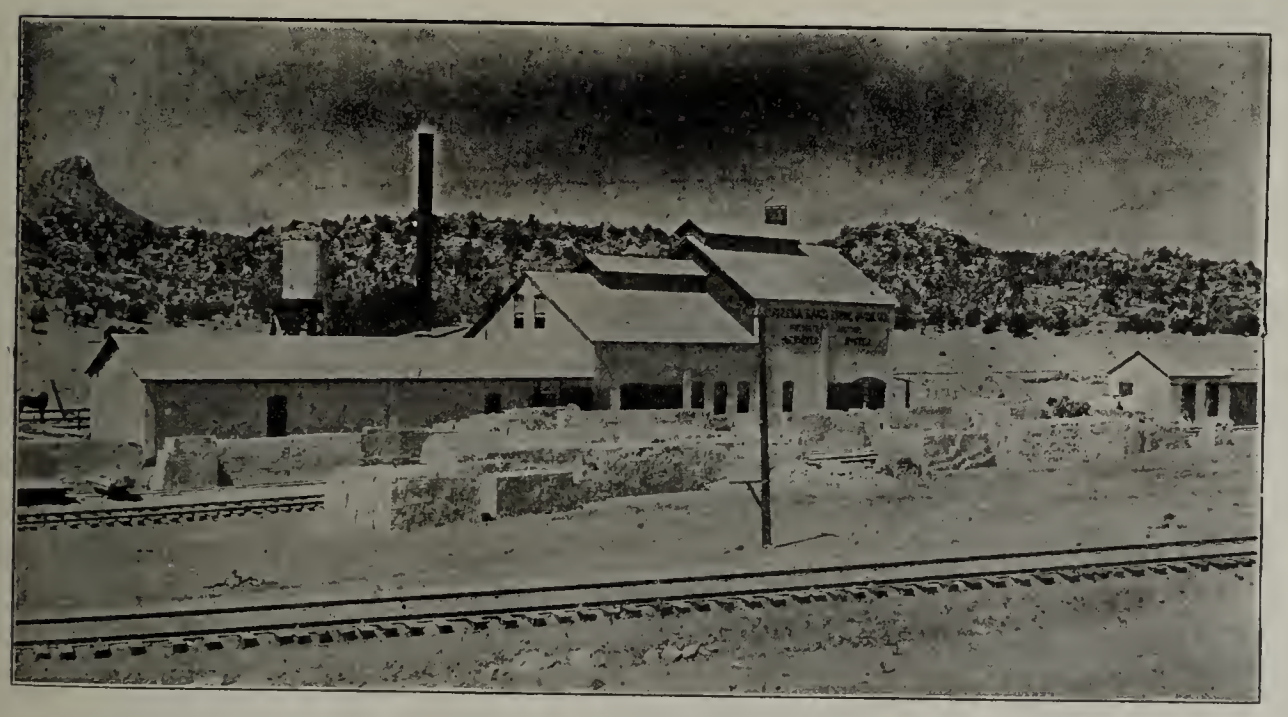

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Before the expiration of this year the total combined capacity of the factories erected and operated under the "Huennekes System" will be about 300 million bricks per annum—or a growth of about 2,000 per cent in one year.

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Send for information. We have equipped plants in all parts of the United States. We do not use cement or chemicals, and do not sell patent rights.

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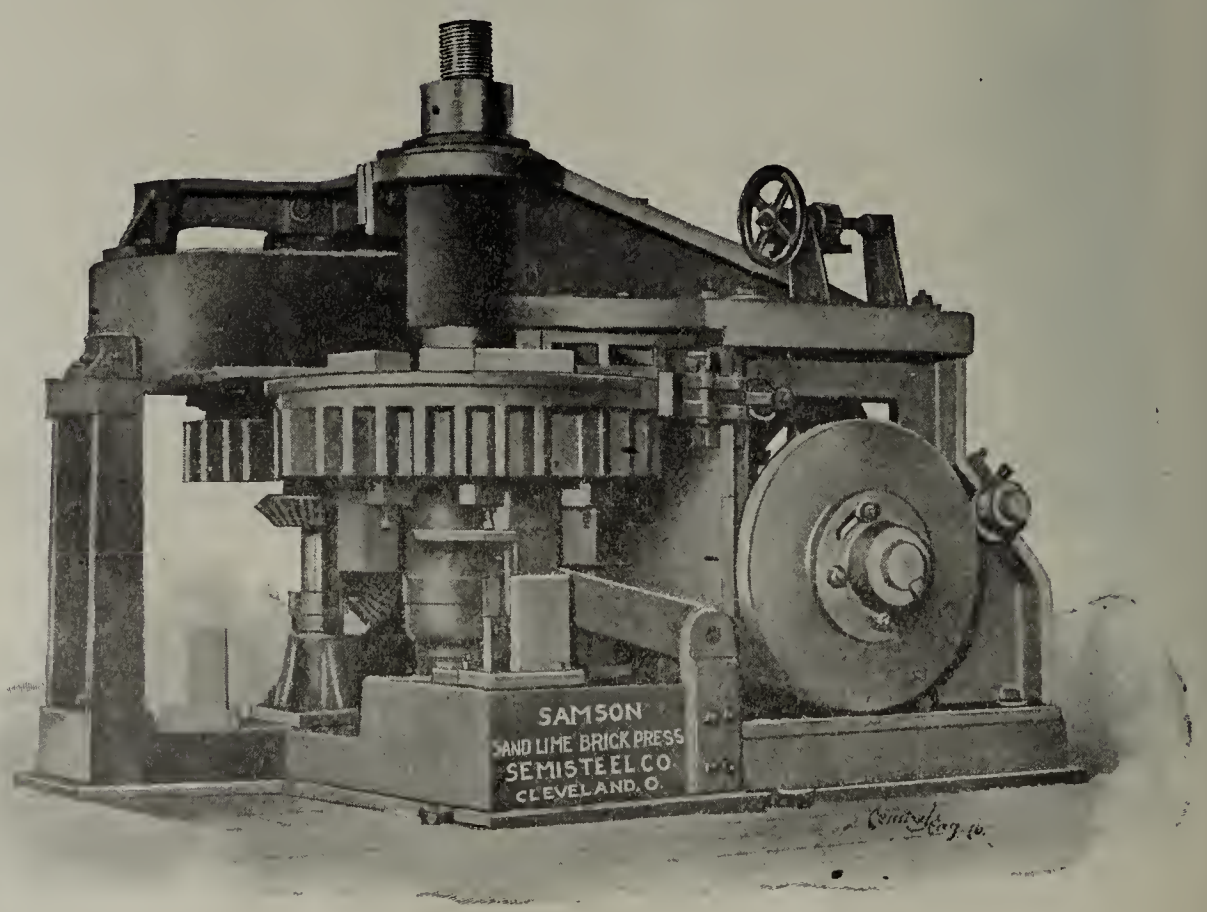

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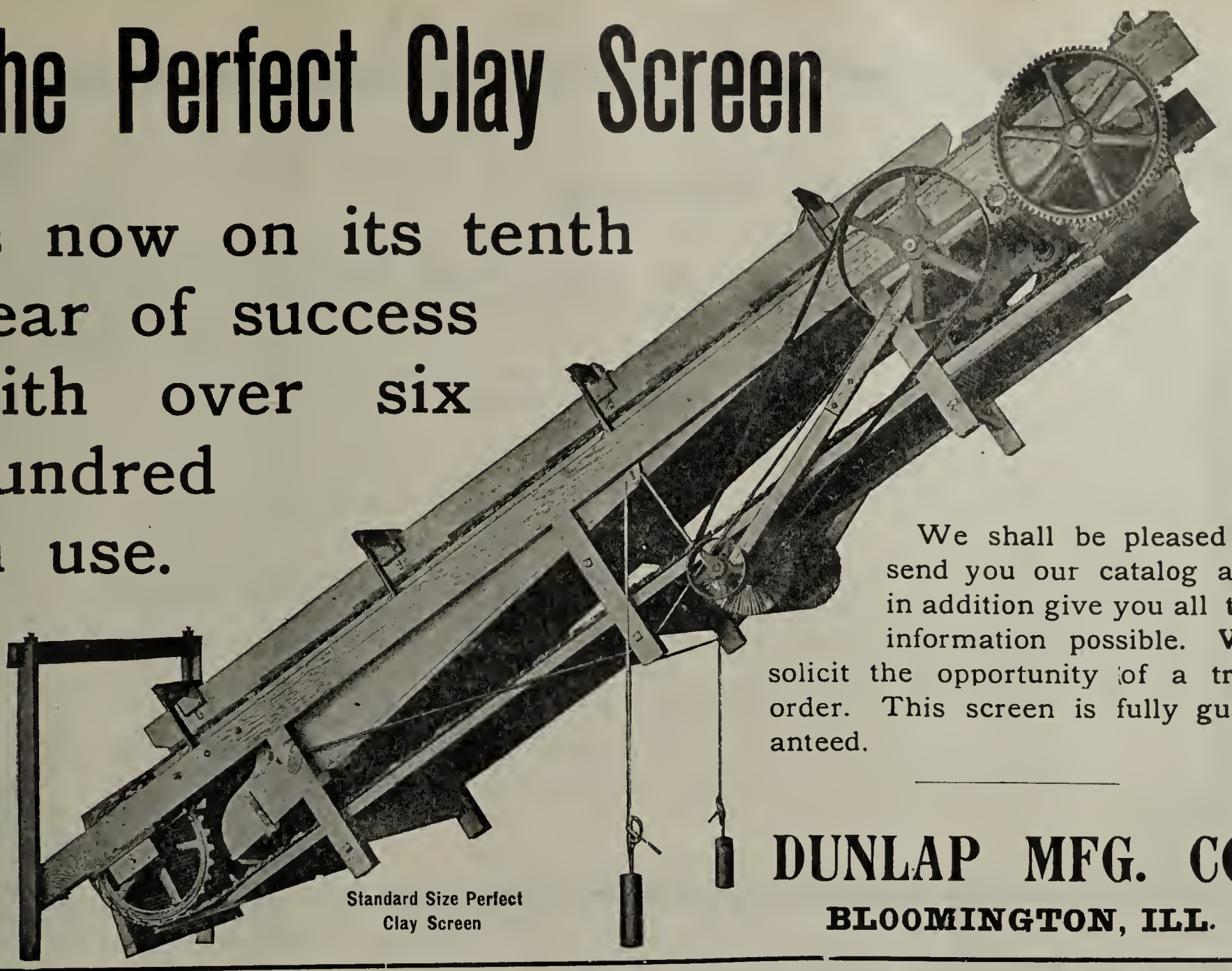

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Has saved more money to brickmakers than any other apparatus.

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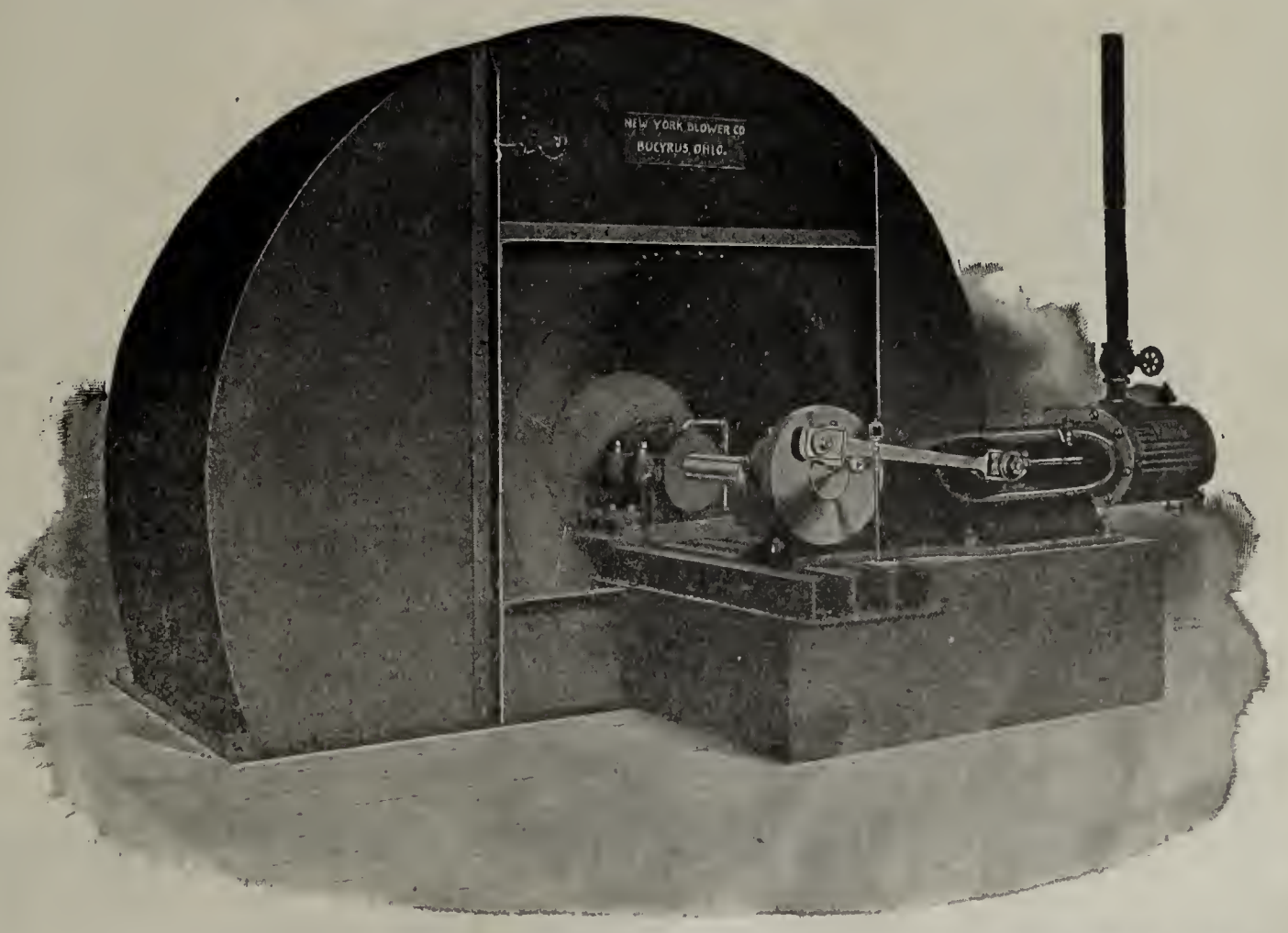

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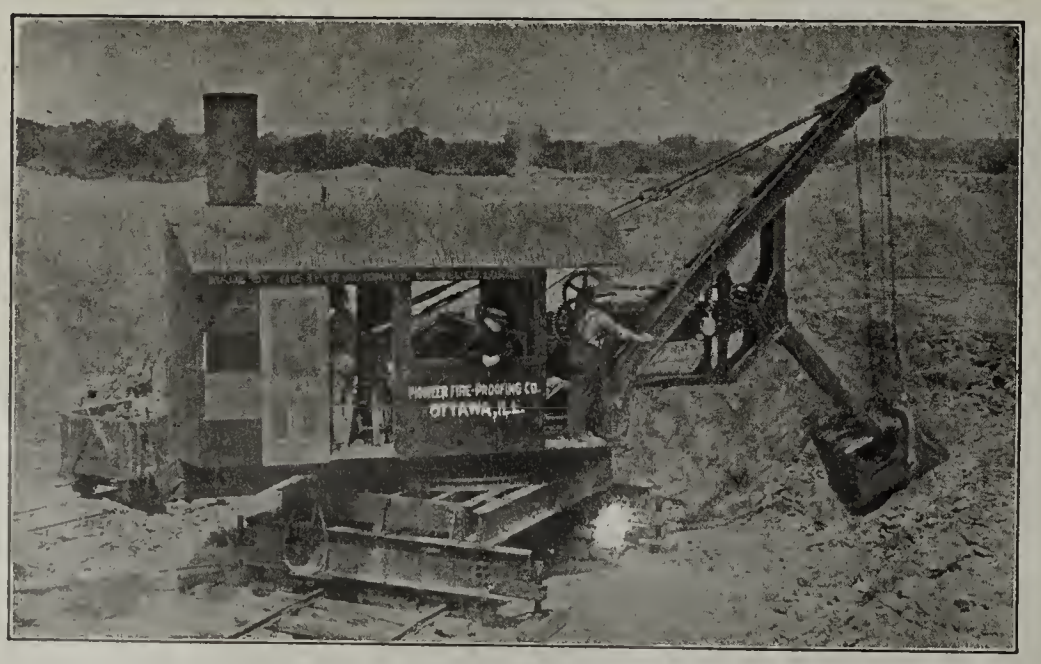

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Operated by one man for outputs up to 125,000 brick per day.

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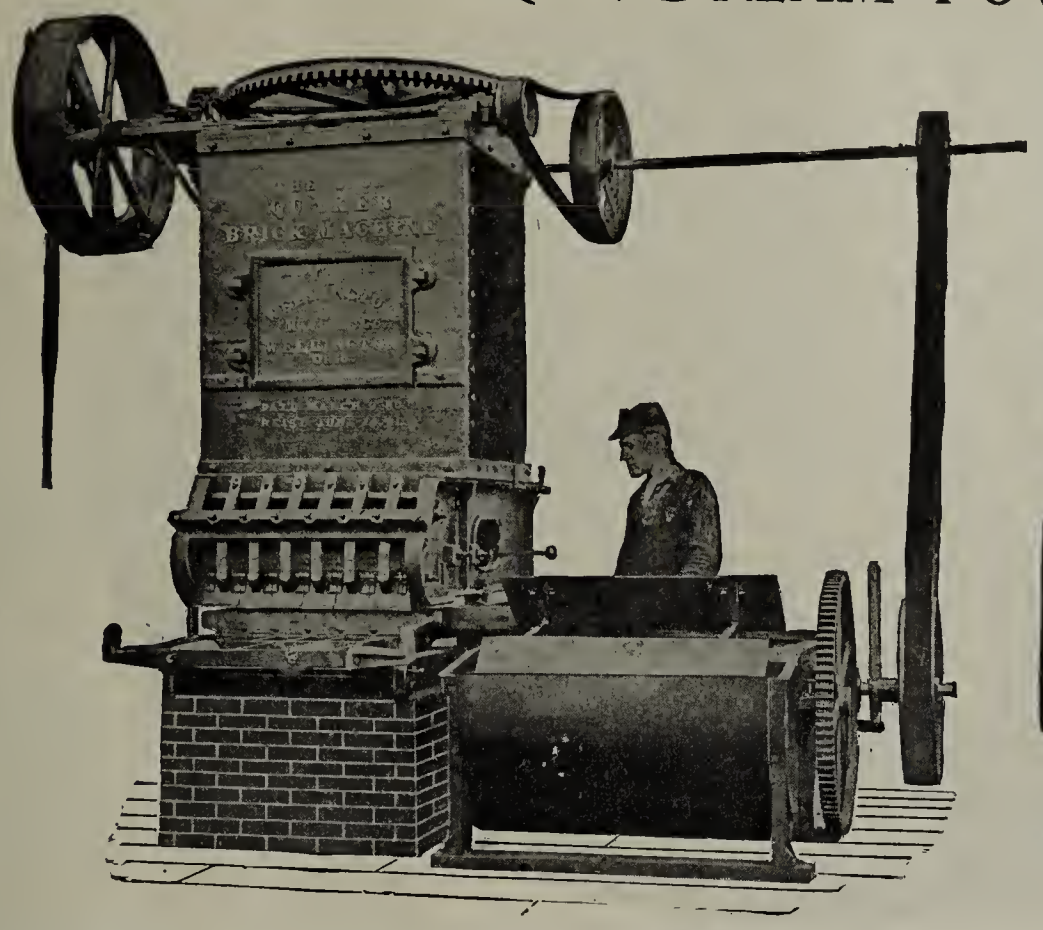

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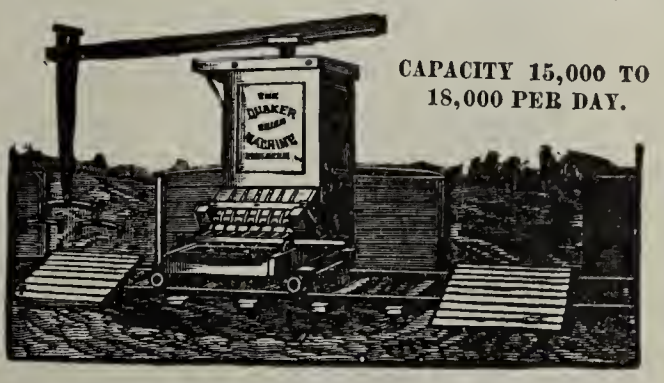

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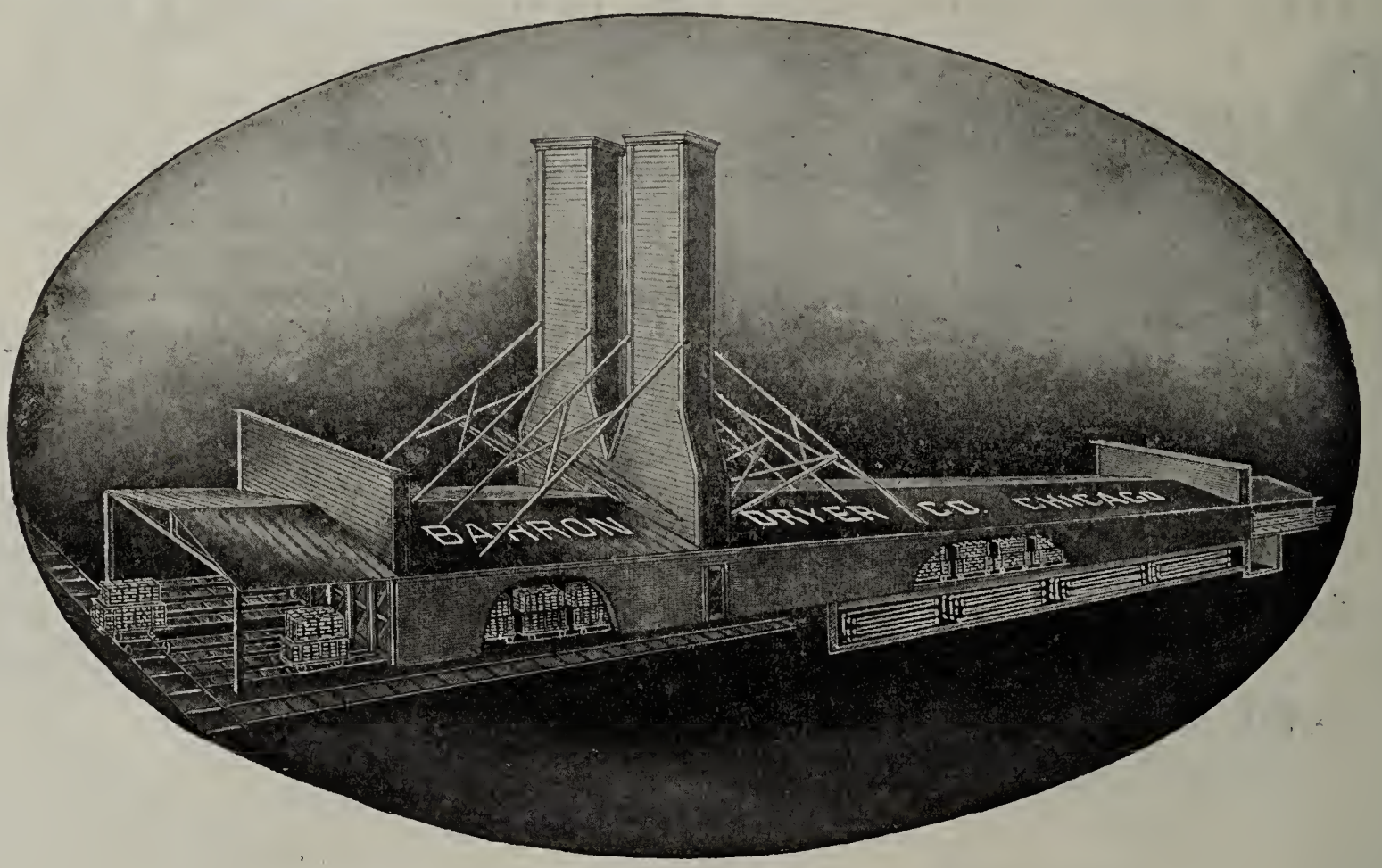

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You know that the brickmakers who are making the money in these days are those who have installed an up-to-date drying system enabling them to cope with ease with the heaviest demands of the market, their operations being uninterrupted all the year round.

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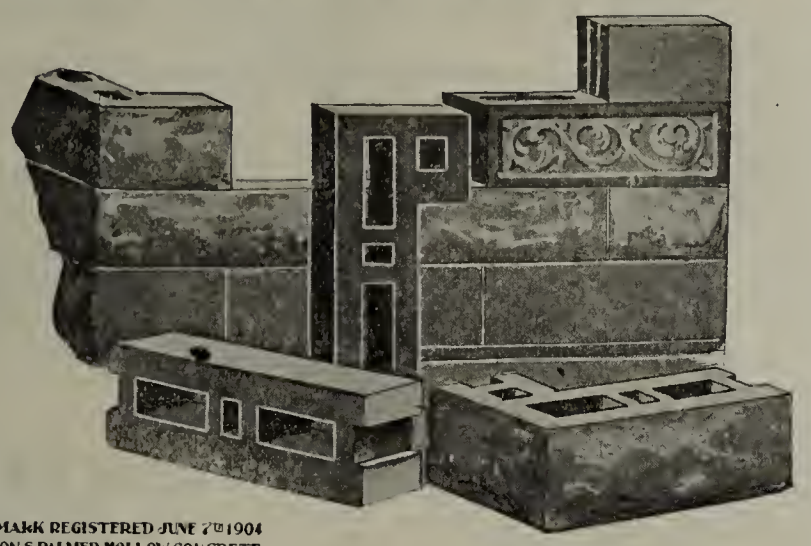

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It makes all angles for **bay-windows.**

It makes blocks of different contour by removable face plates with patented designs.

It makes **joist** blocks and **nelting-courses.**

It was invented by a **practical** builder who knew what was necessary.

Its proportion as to strength and weight are correct.

It is not a cumbersome and bungling piece of mechanism.

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Don't be deceived into buying a machine just because it makes a hole in a block. This is like poison to our business.

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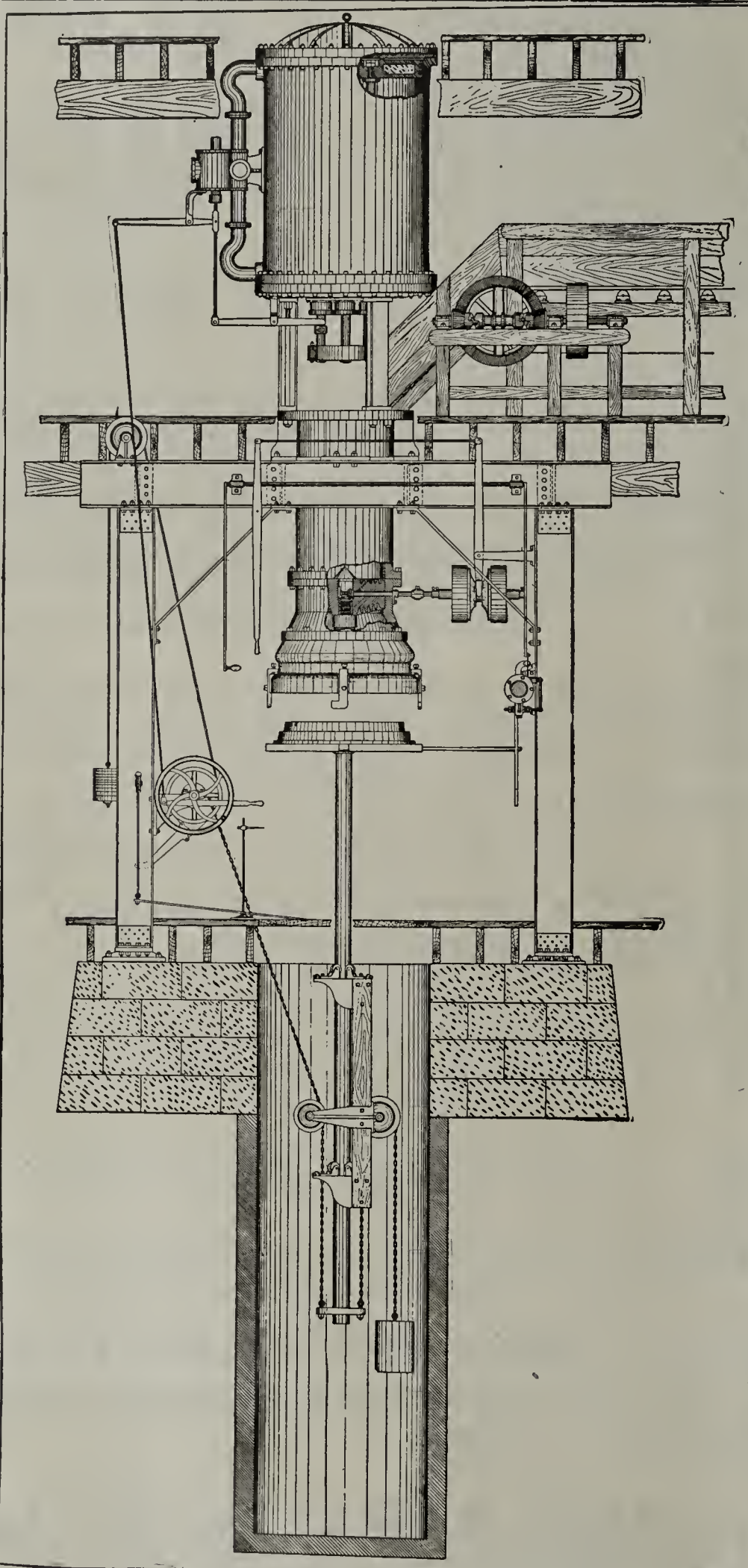

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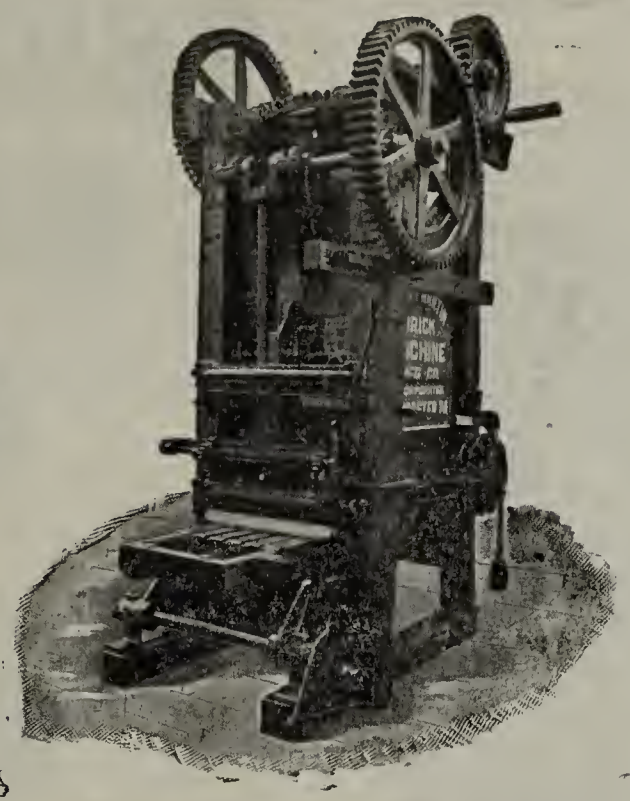

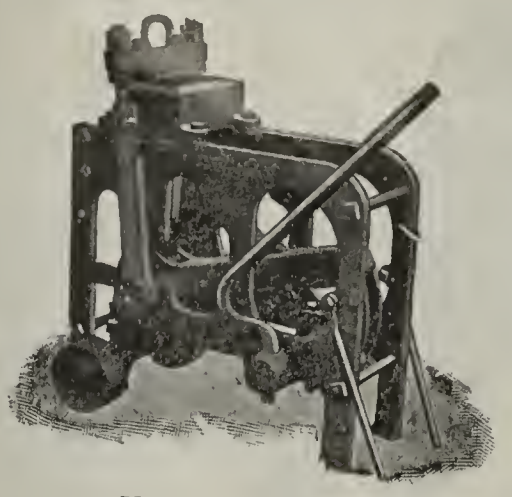

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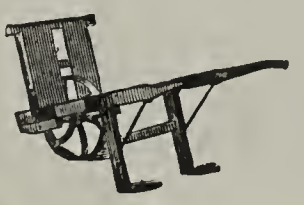

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STEAM DRYER
PATENTED

Simple in Construction.
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Skilled labor Unnecessary.
Dries the brick over night.
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Absolutely Fire-proof.
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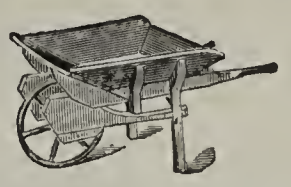

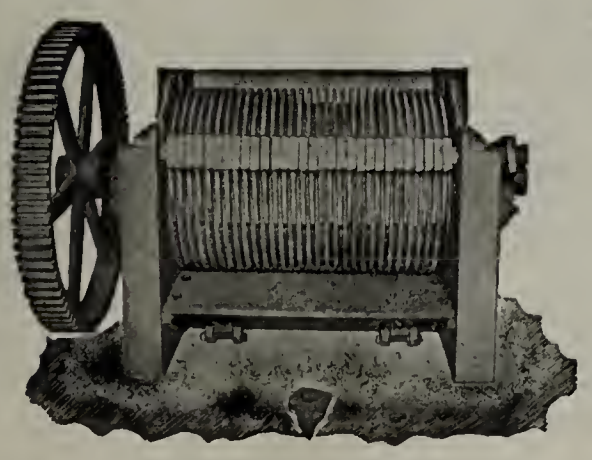

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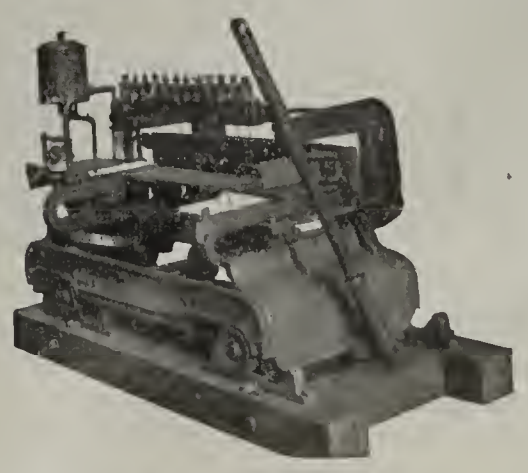
Sand Dryers



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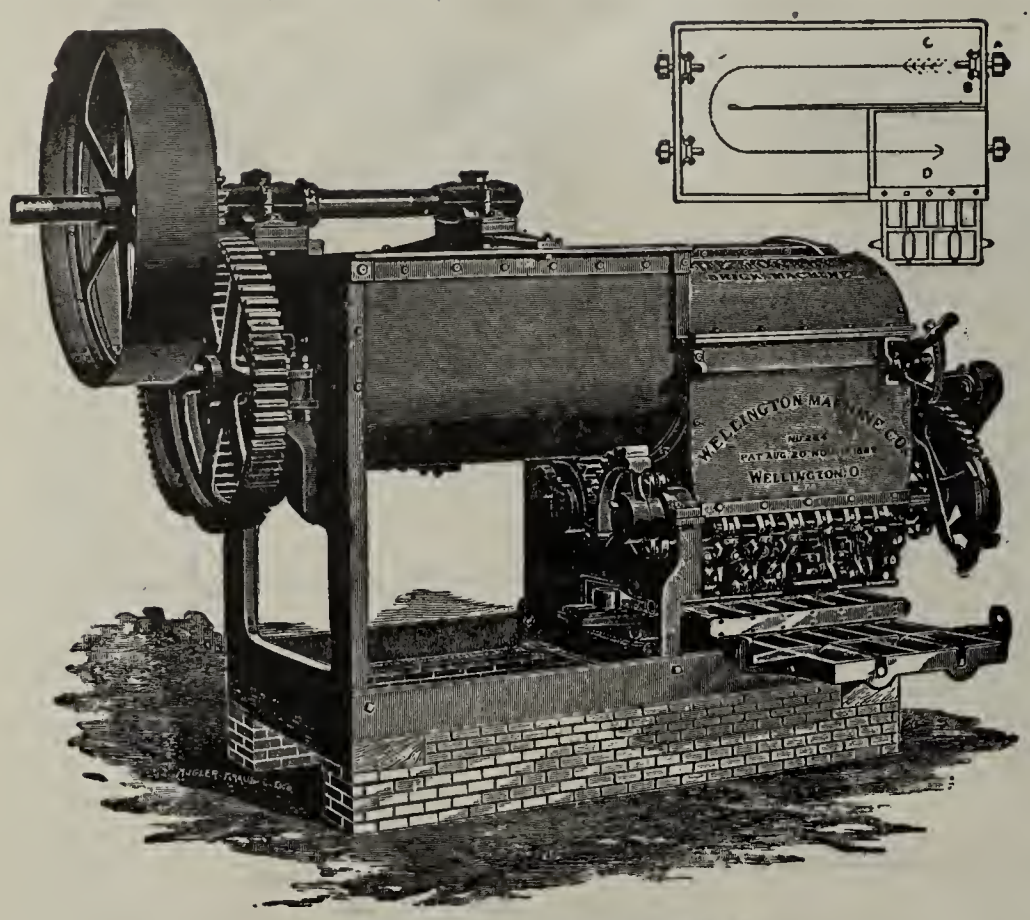

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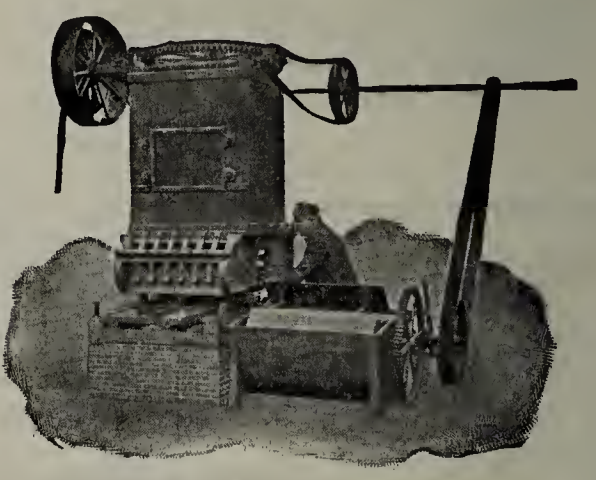

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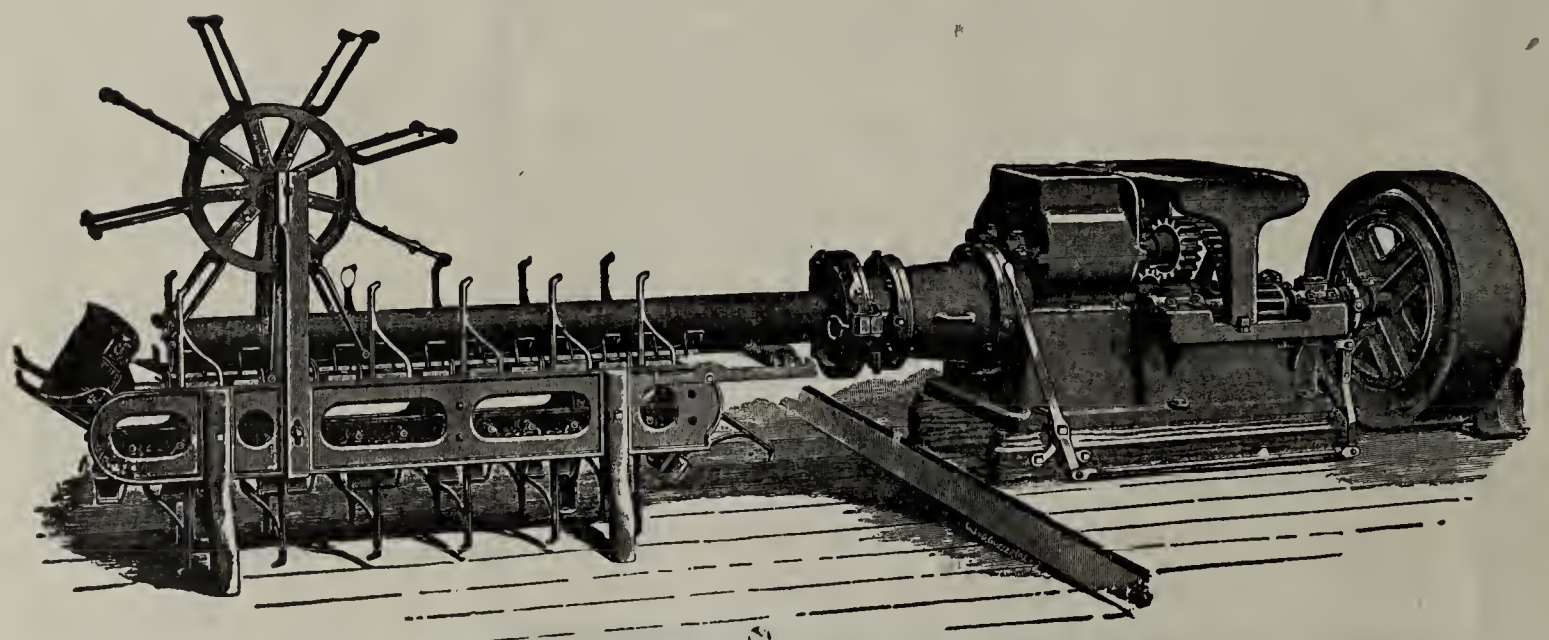

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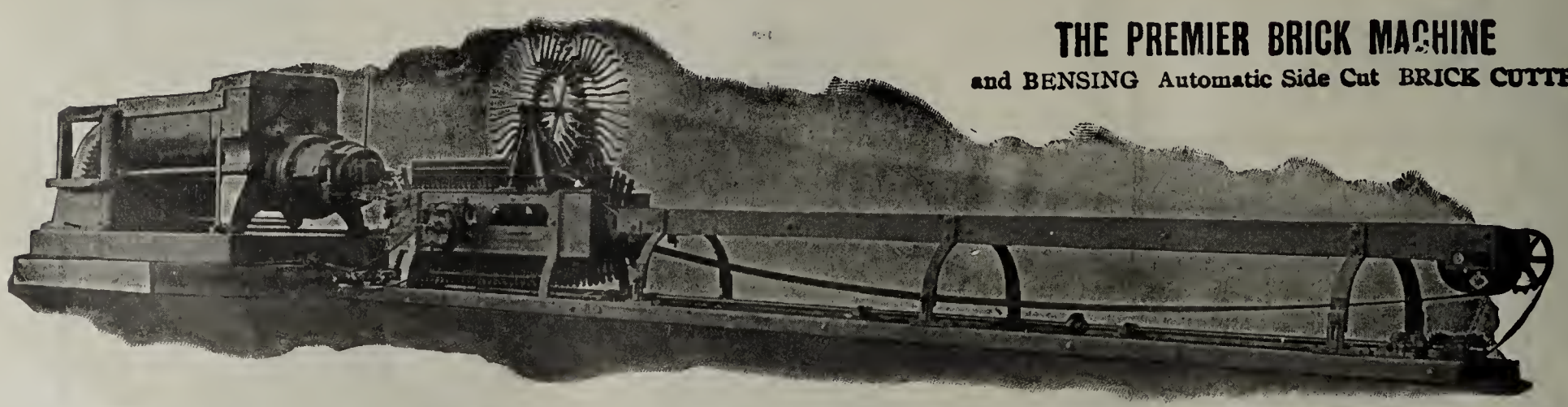

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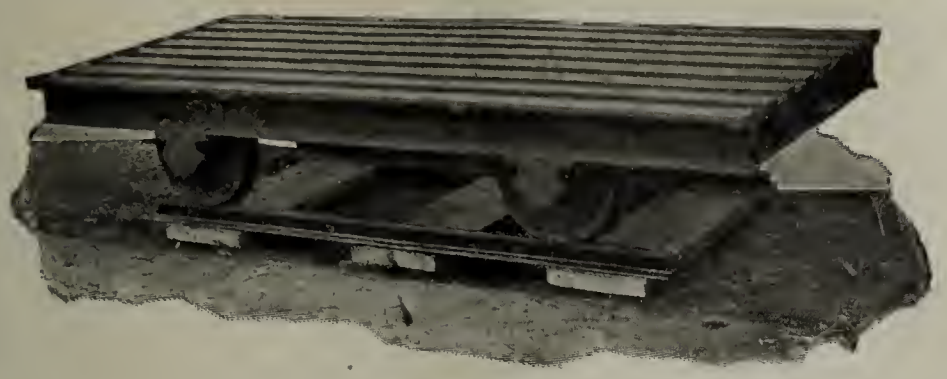

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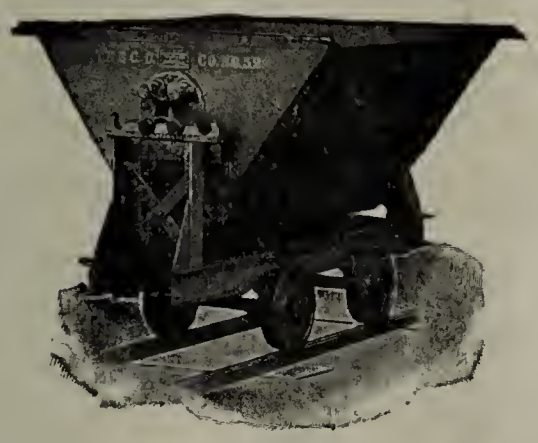

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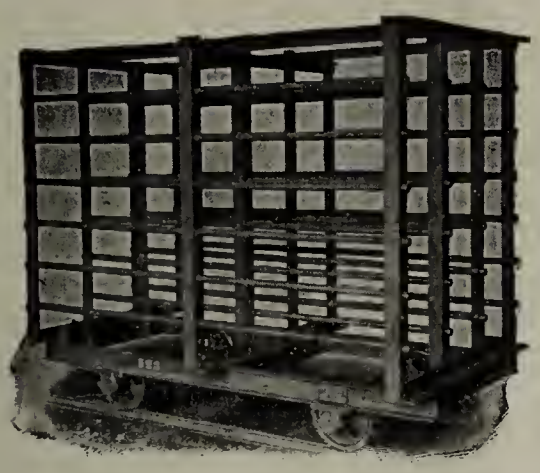
ONE SIDE DUMP CAR.
For Dumping Into Dry Pans, Disintegrators and Crushers.

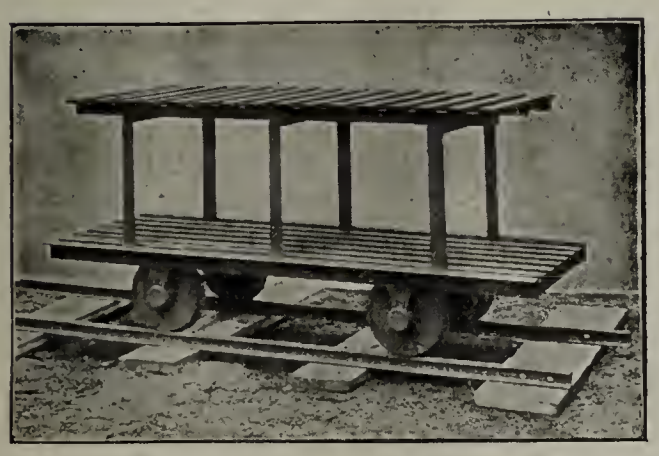


No. 523.
RACK CAR, HEAVY TYPE.
For Use With Coke Oven, Furnace and Cupola Block.

Dryer Cars of Every Description, Dump Cars, Turn Tables, Transfer Cars, Switches, Frogs, Rails, Etc.

Overhead Trolleys, Kiln Doors, Furnace Fronts, Grate Bars and Brick Barrows : : : :

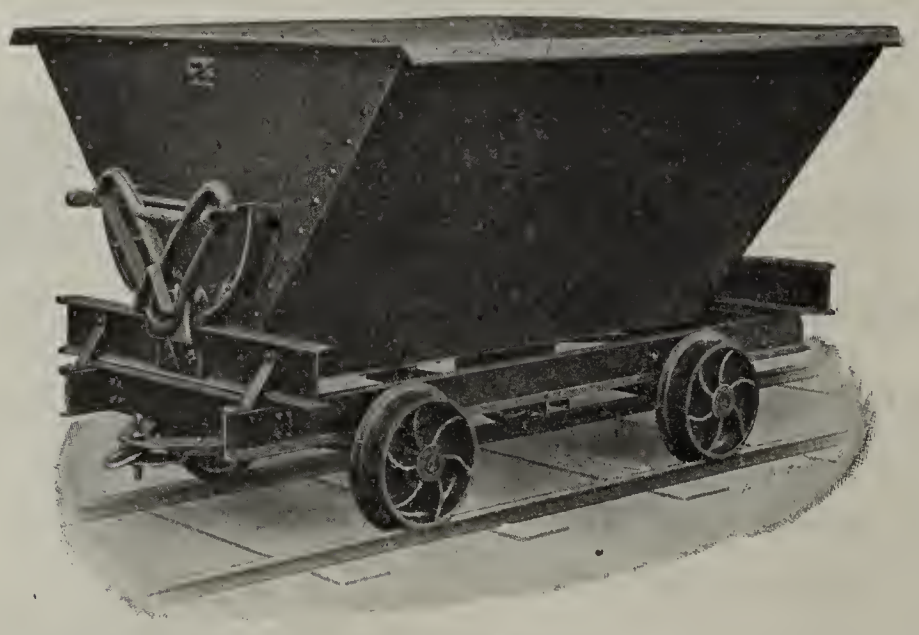
No. 31.
END DUMP CAR.
Adapted to Handling Coal, Shale, Sand, Etc.



No. 244.
DOUBLE DECK CAR, STEEL DECKS.
For Brick, Tile, Fire-Proofing, Etc.

No. 245A.
DOUBLE DECK CAR, WOODEN DECK.
For Brick and Other Clay Products.

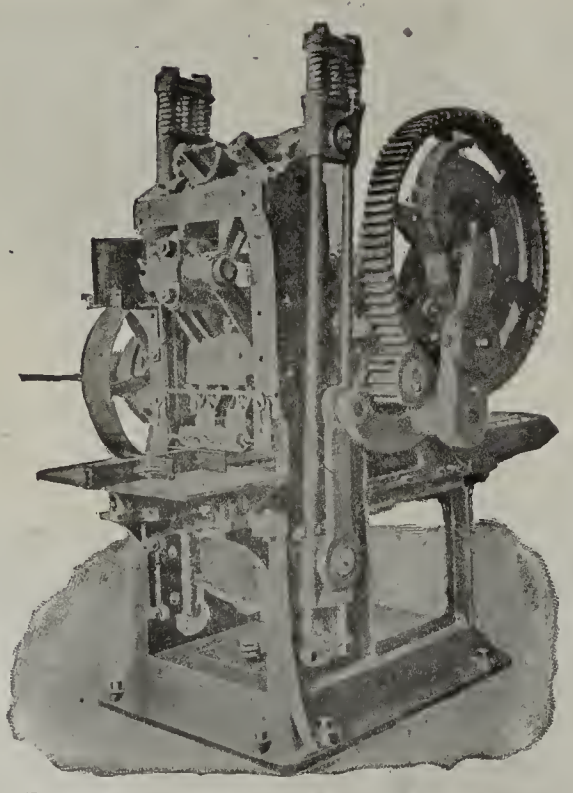
Are Your Clay Cars Satisfactory?



Clay Car.

If not, we can send some which we guarantee will be. They have no chains or pins to get lost or broken, cars cannot overdump, are self-locking, self-centering, easy running and durable.

We also build dryer cars of all kinds for all purposes.



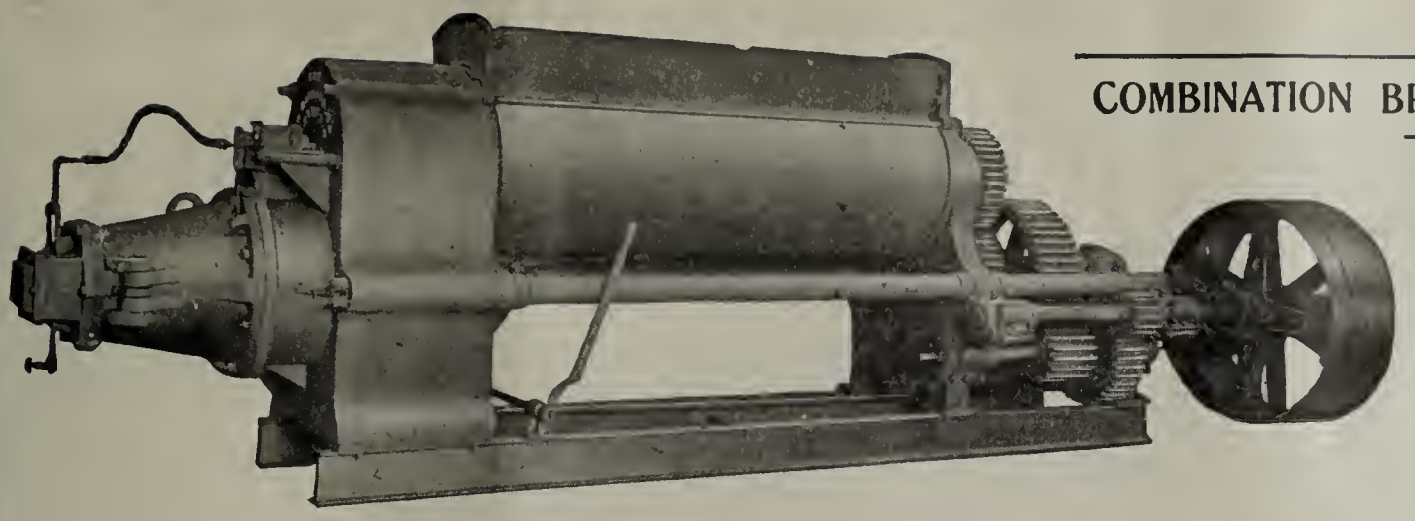
Richardson Double Die Repress.

The Richardson Repress has all the features of merit that are demanded of a machine of this kind. Has enough depth of mold to make the largest size paving brick. All the working parts are above dies out of the way of waste clay. It has a slow pressing movement with double pressure, bringing out distinctly all markings and lettering. The working parts are adjustible to wear. It requires very little power and costs little to keep in repair.

Kindly write us for catalogs and full information.

The Ohio Ceramic Engineering Company

50-56 Fall Street, Cleveland, Ohio.



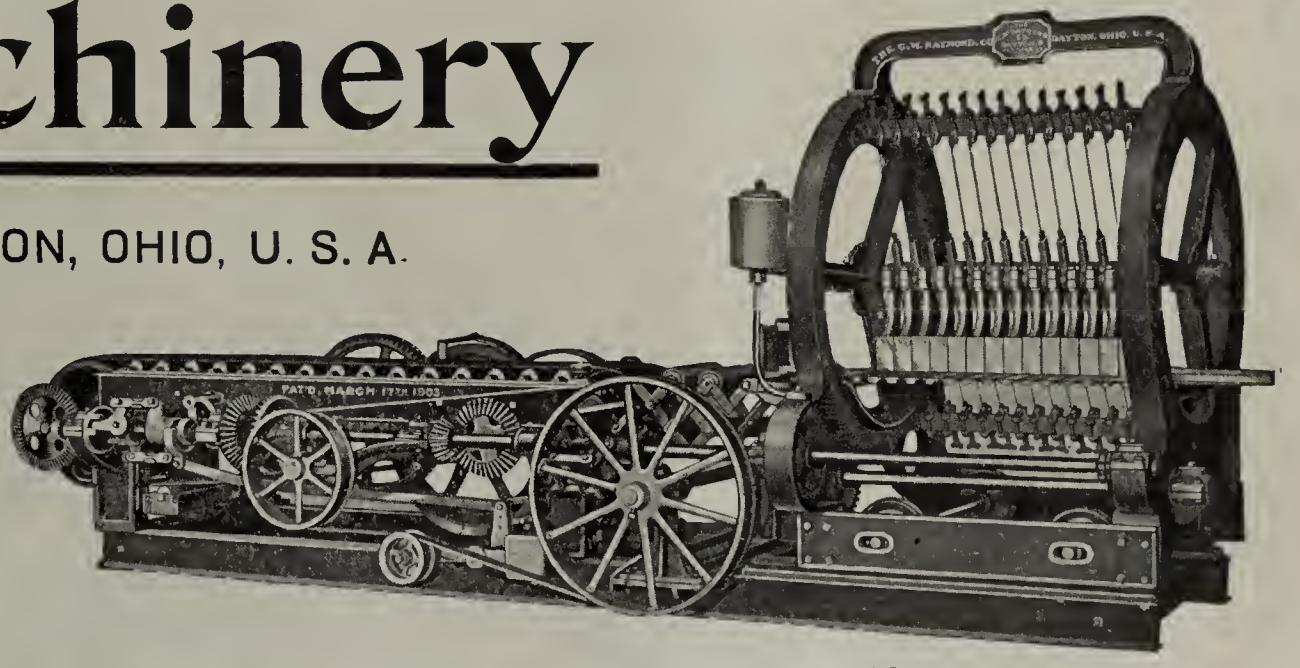
COMBINATION BRICK MACHINE

THE C. W. RAYMOND CO

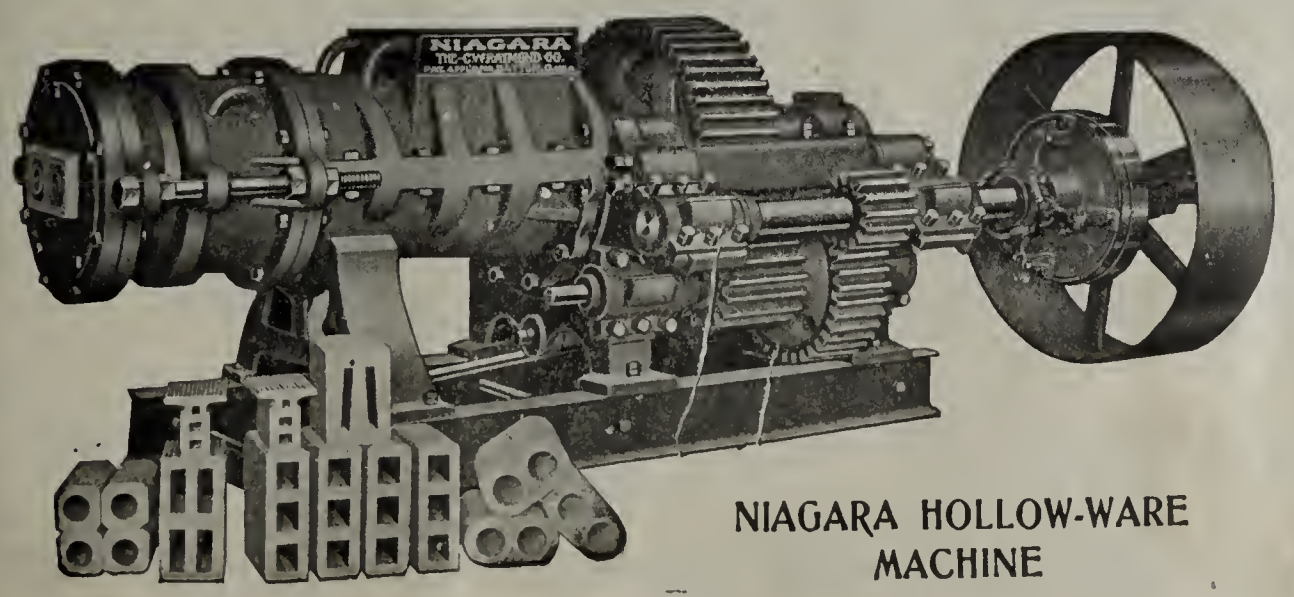
Clay-Working Machinery

DAYTON, OHIO, U. S. A.

NEW YORK
39—41 Cortlandt Street
ST. LOUIS
315 Frisco Building
PITTSBURG
1425 Park Building



AUTOMATIC DOWN-CUT CUTTER

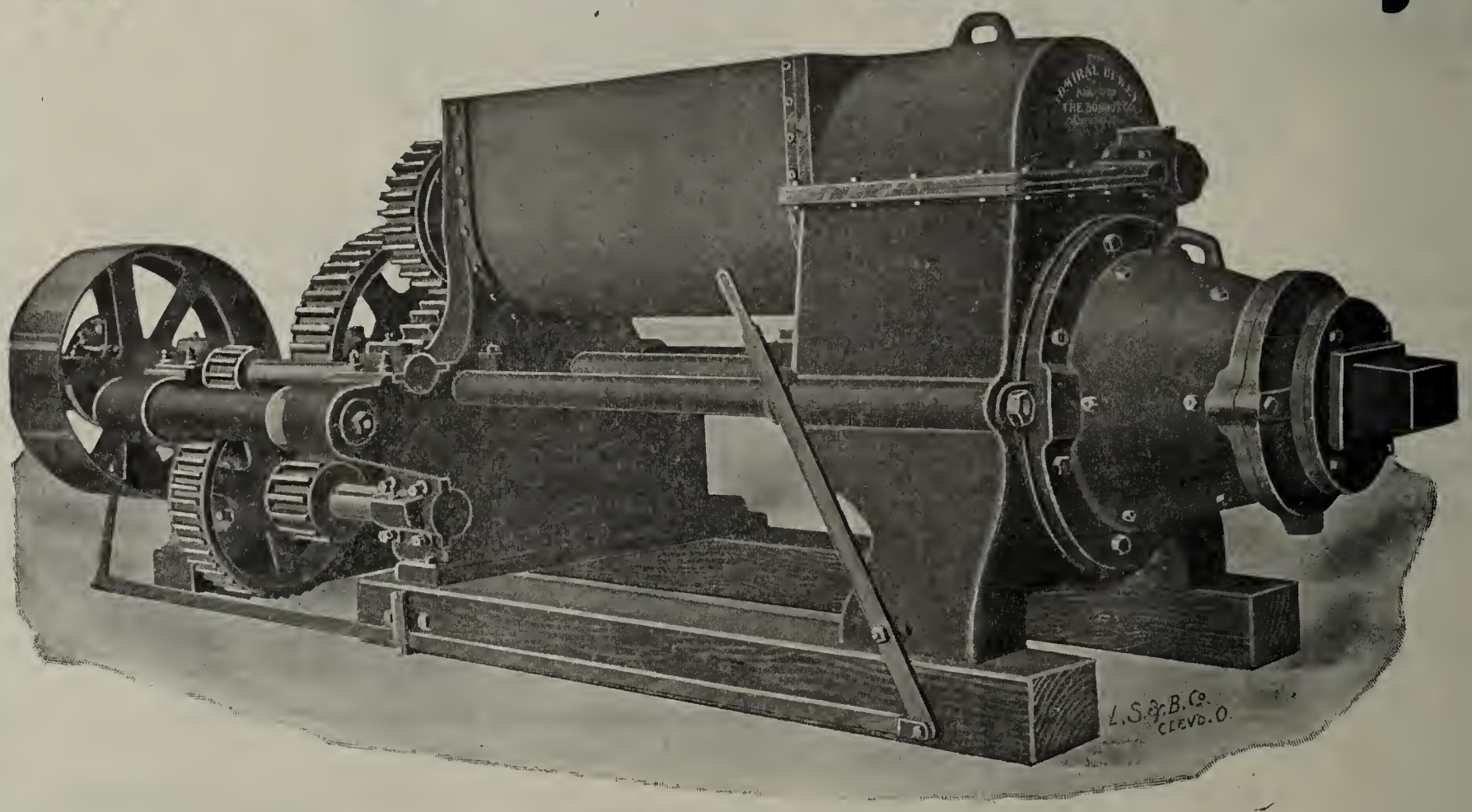


NIAGARA HOLLOW-WARE MACHINE

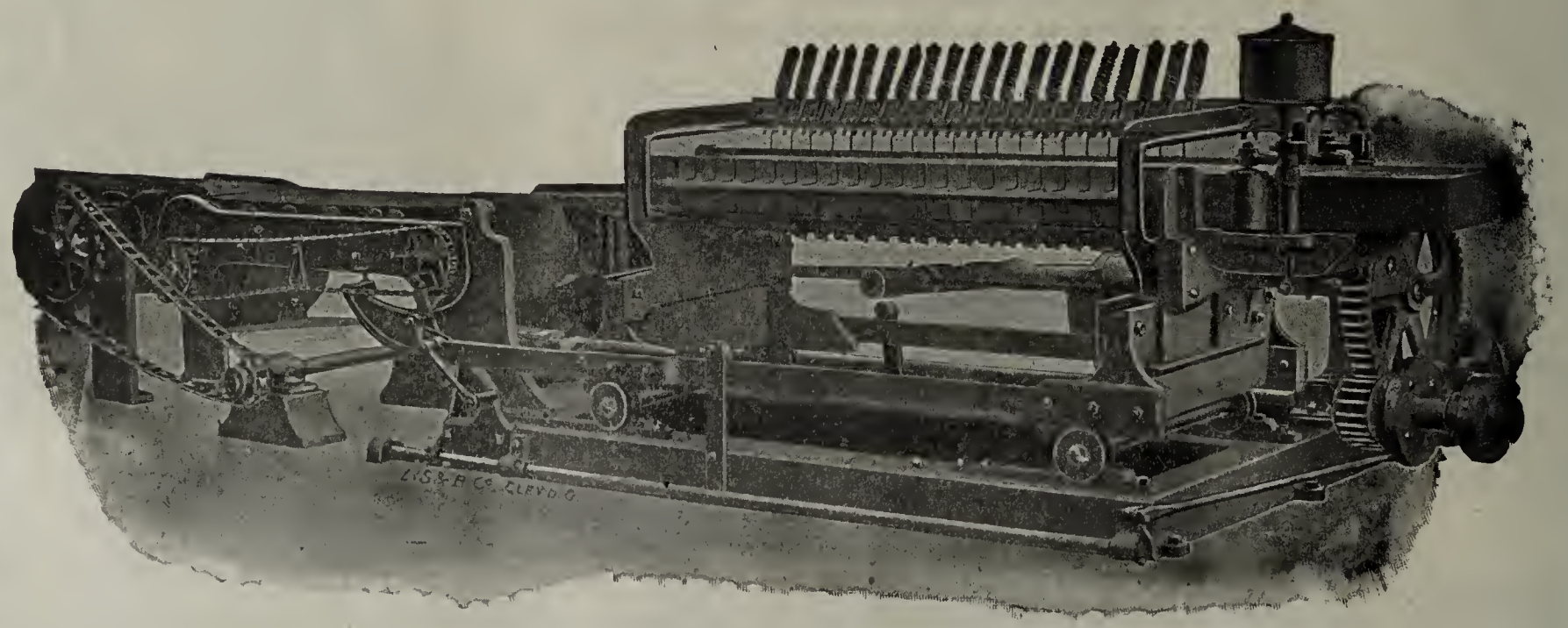
Raymond Machinery
Creates New
Business for the User
Better Brick
and more of them.

CATALOGUE

Modern Brick Machinery



SPECIAL COMBINED BRICK MACHINE AND PUG MILL 100,000 daily capacity.
AUGER BRICK MACHINES 10,000 to 100,000 capacity, five sizes.



AUTOMATIC SIDE CUT TABLE. Simple, positive, durable.

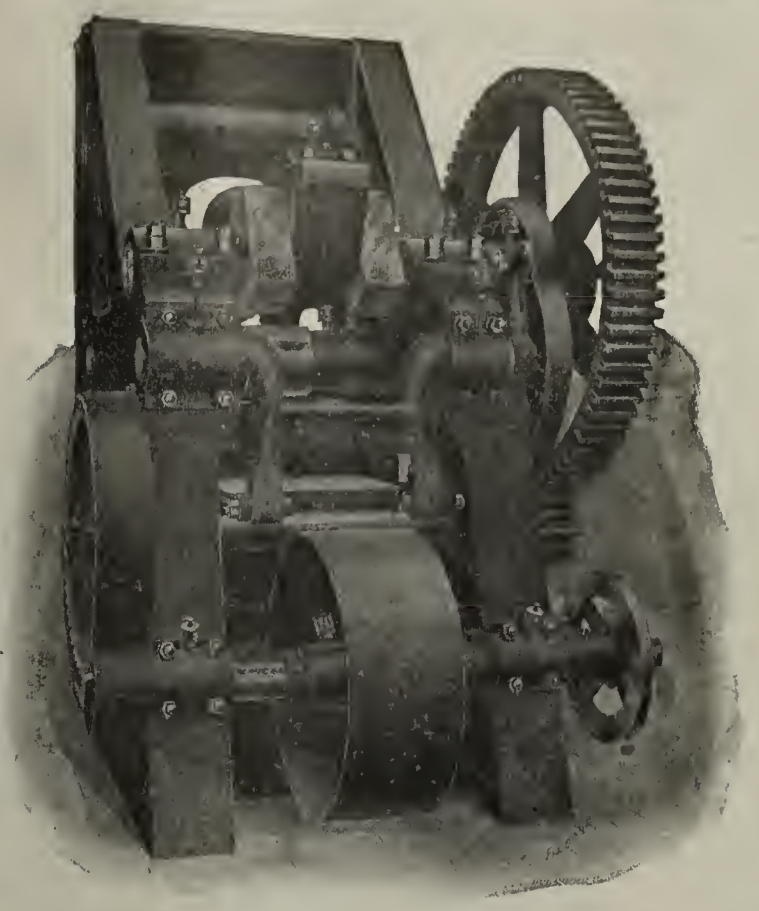
COMPLETE EQUIPMENTS FOR BRICKMAKERS. *ASK FOR CATALOGUE*

THE BONNOT COMPANY, Canton, Ohio.

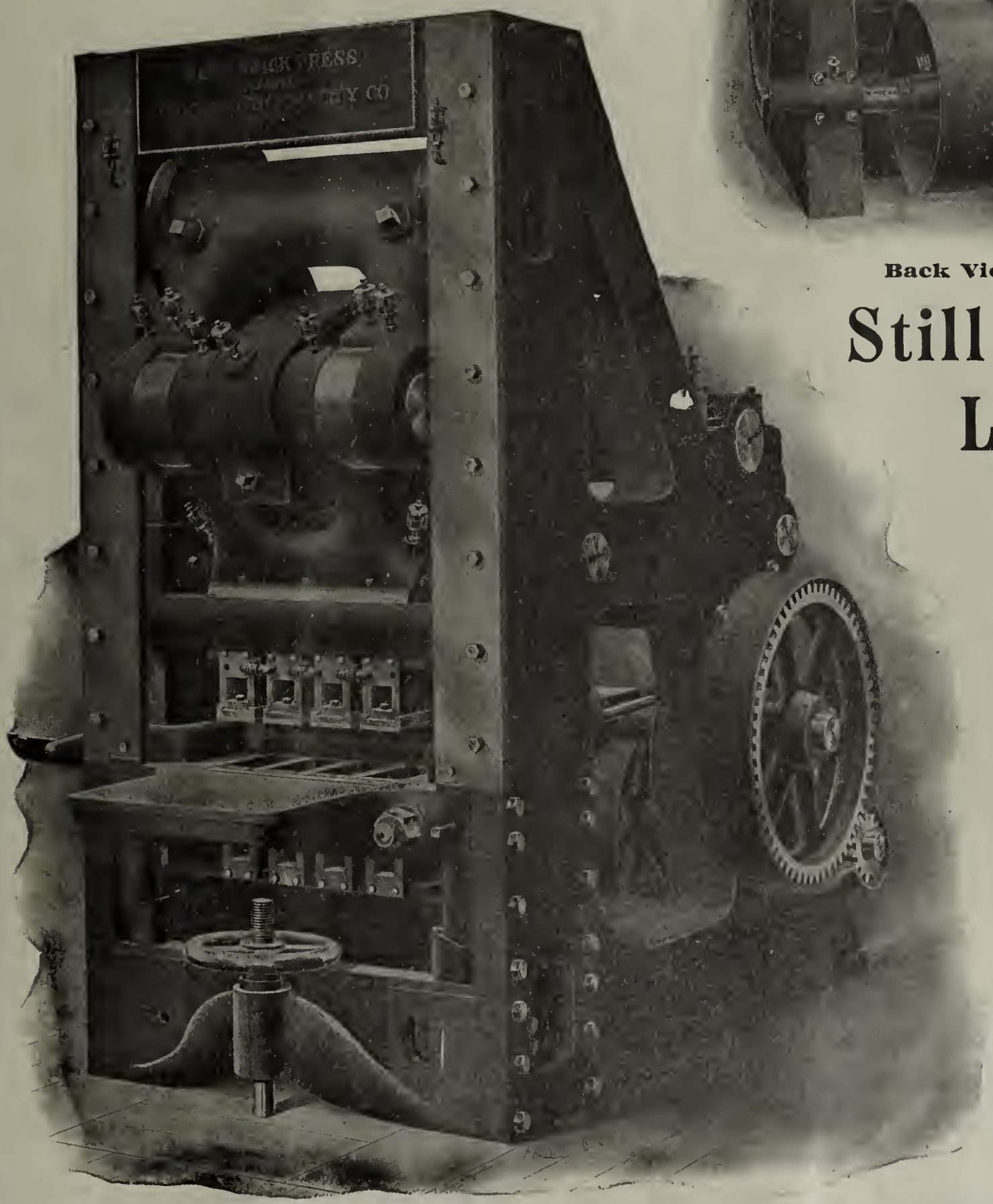
—WESTERN AGENTS—

CHICAGO BRICK MACHINERY CO., - - 77 Jackson Boulevard, Chicago, Ill.

NEW MODEL BERG BRICK PRESS



Back View.



Still in the Lead

AND

One Step Further Forward

Even stronger than ever and all self-contained. Greater pressure and fewer working parts than any other machine. Simple, massive, compact. Running mechanism placed in rear, as shown in upper cut, enabling this machine to be SHIPPED IN ONE PIECE.

MANUFACTURED BY

ANDERSON FOUNDRY & MACHINE WORKS

Anderson, Indiana.

SOLD BY

CHICAGO BRICK MACHINERY COMPANY

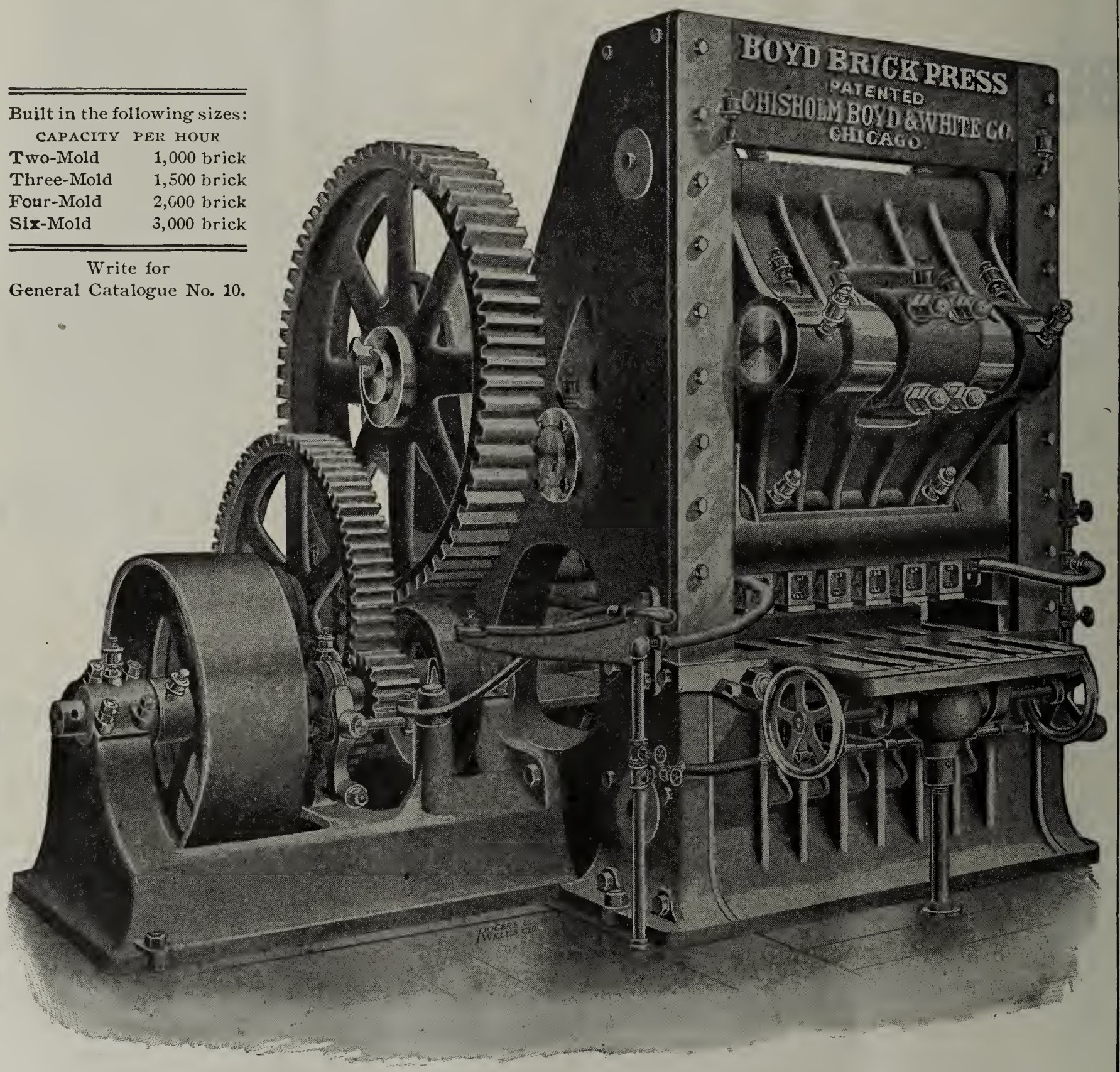
77 Jackson Boulevard, Chicago.

The Boyd Brick Press

Built in the following sizes:

CAPACITY PER HOUR	
Two-Mold	1,000 brick
Three-Mold	1,500 brick
Four-Mold	2,000 brick
Six-Mold	3,000 brick

Write for
General Catalogue No. 10.



Another Record for the Boyd Press:

Six of our SIX-MOLD PRESSES in use on ONE YARD since 1892. Average cost of repairs for each machine One Dollar per year.

THE BOYD PRESS has always been distinguished for originality in design and construction. It will make better brick from clay or shale than can be made from the same material by any other press. It is selected and purchased by the most progressive Brick Makers. The largest and most successful brick plants in the country are using Boyd Presses.

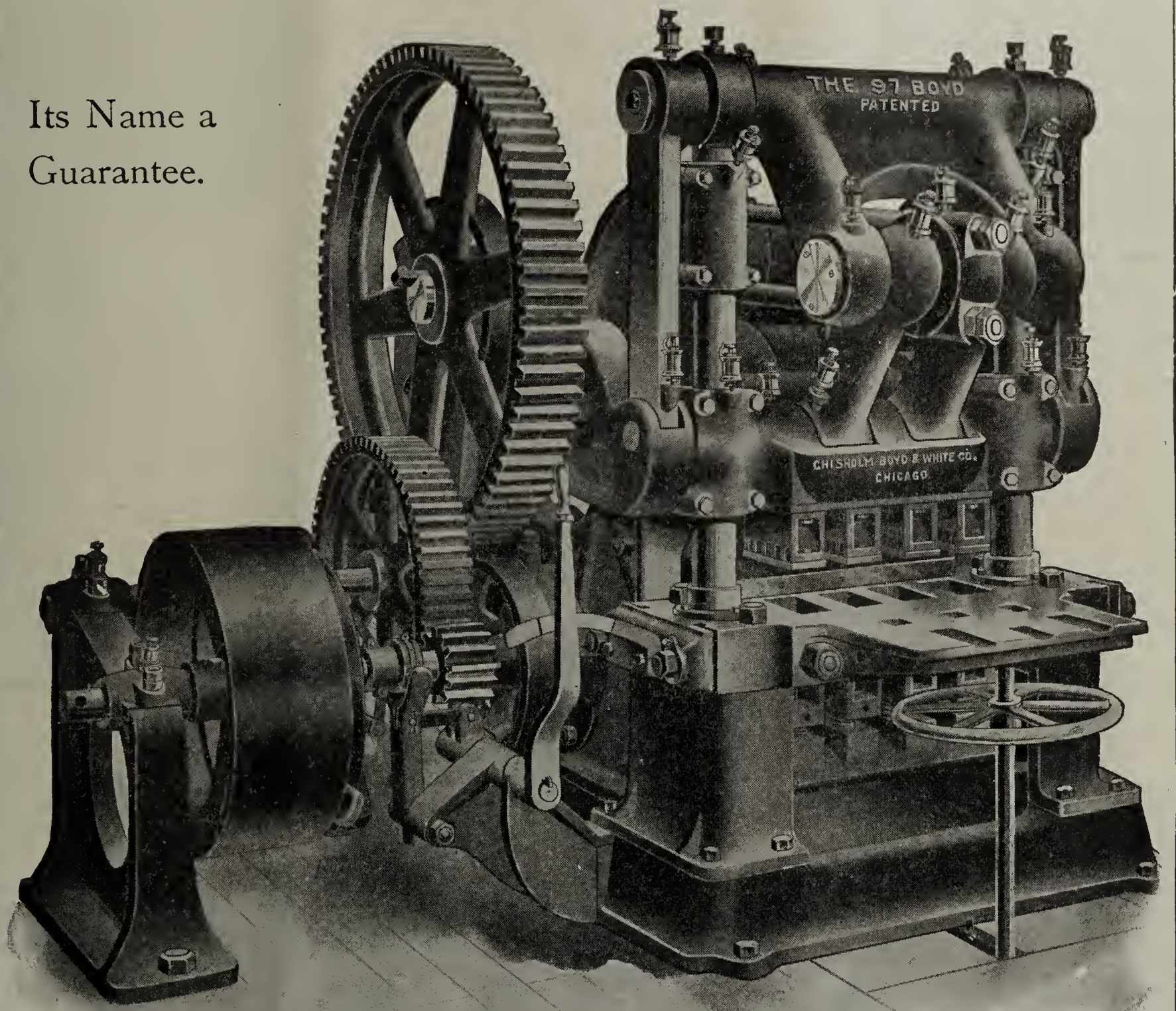
Chisholm, Boyd & White Company

Office and Works, 57th and Wallace Sts. **CHICAGO, ILL.**

The Boyd Brick Press

The '97 Model

Its Name a Guarantee.



THE '97 MODEL BOYD BRICK PRESS has enormous strength and great durability; it is compact; the adjustments are convenient; it operates quietly and smoothly; the workmanship and material are of the best; the design ingenious, and shows the most perfect application of scientific and mechanical principles to the art of brickmaking.

THE BOYD is the only Brick Press provided with an independent adjusting device for regulating the amount of clay in the molds and the pressure on the brick. This feature positively ensures equal pressure and finish on both sides of the brick, and no granulated or soft centers.

Sent on trial and fully guaranteed. Seventy presses of this pattern now in use. Cannot be broken in pressing brick. Write for descriptive catalogue No. 9.

Chisholm, Boyd & White Company

Office and Works, 57th and Wallace Sts. **CHICAGO, ILL.**

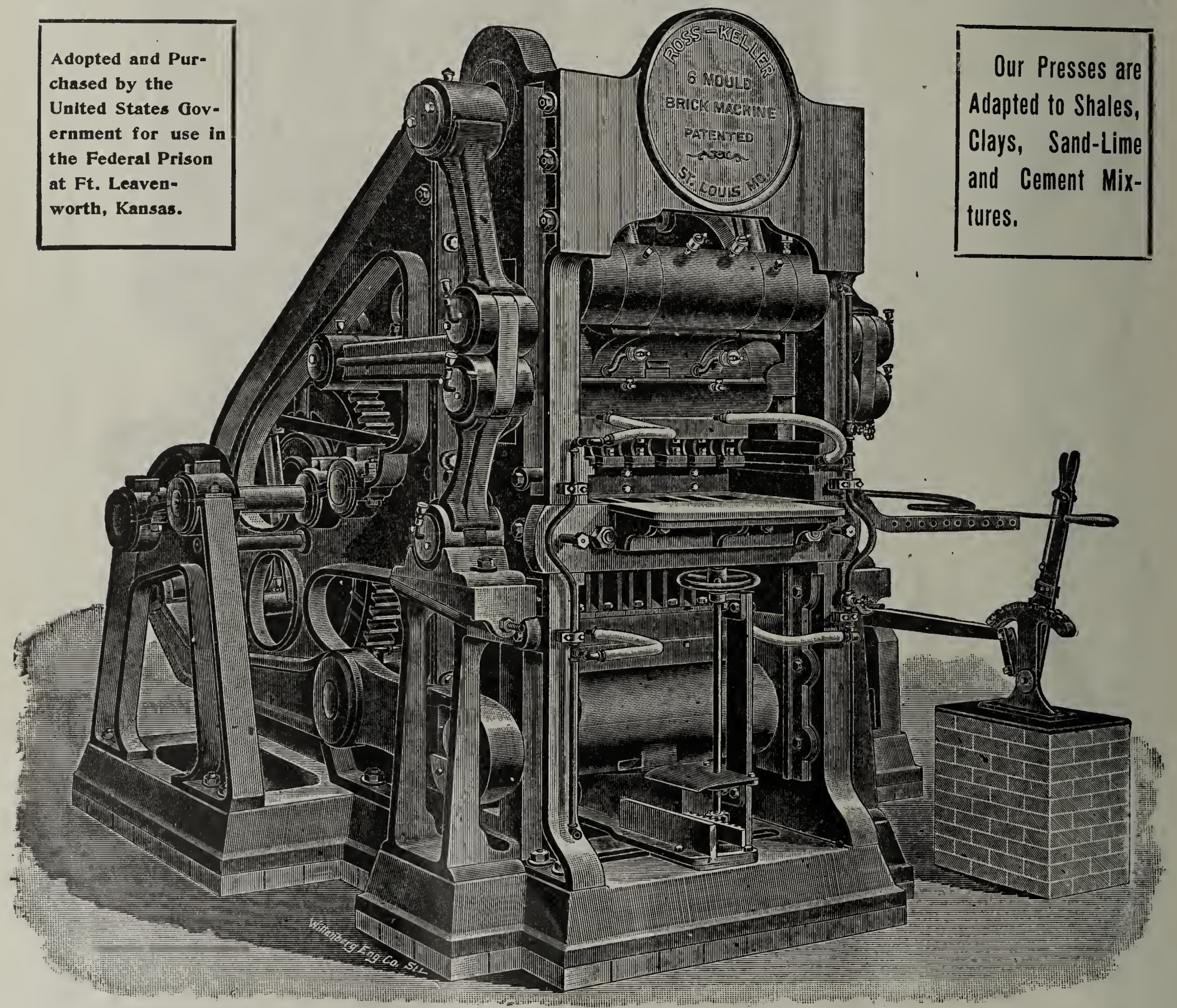
DO YOU KNOW

That we are building the best Sand-Lime Brick Plants being erected in this country to-day?

Have just completed and turned over to the purchasers a double Sand-Lime Plant, and made our guarantee good on the trial run. Machinery satisfactory. Product perfect. Everybody happy.

Let us tell you about our machinery, including our celebrated Ross-Keller Triple Pressure Brick Press, which has no equal for strength and efficiency.

Adopted and Purchased by the United States Government for use in the Federal Prison at Ft. Leavenworth, Kansas.



Our Presses are Adapted to Shales, Clays, Sand-Lime and Cement Mixtures.

For prices and particulars address

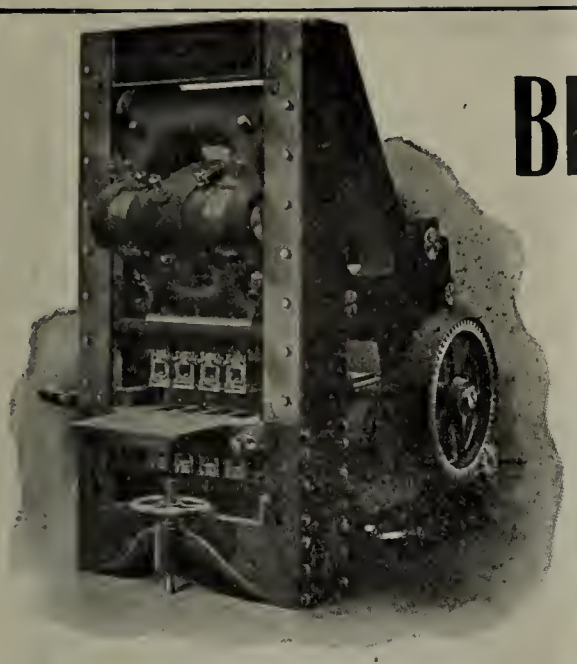
Ross-Keller Triple Pressure Brick Machine Co.

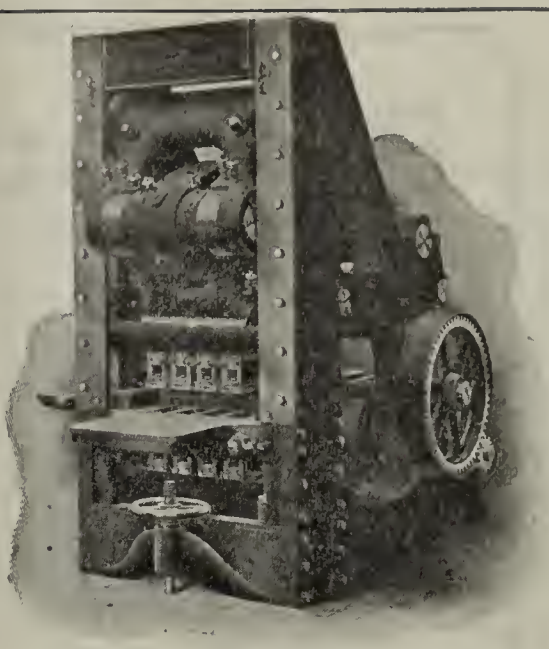
GEO. M. McDOWELL, Sales Agent
for Pacific Coast, Portland, Ore.

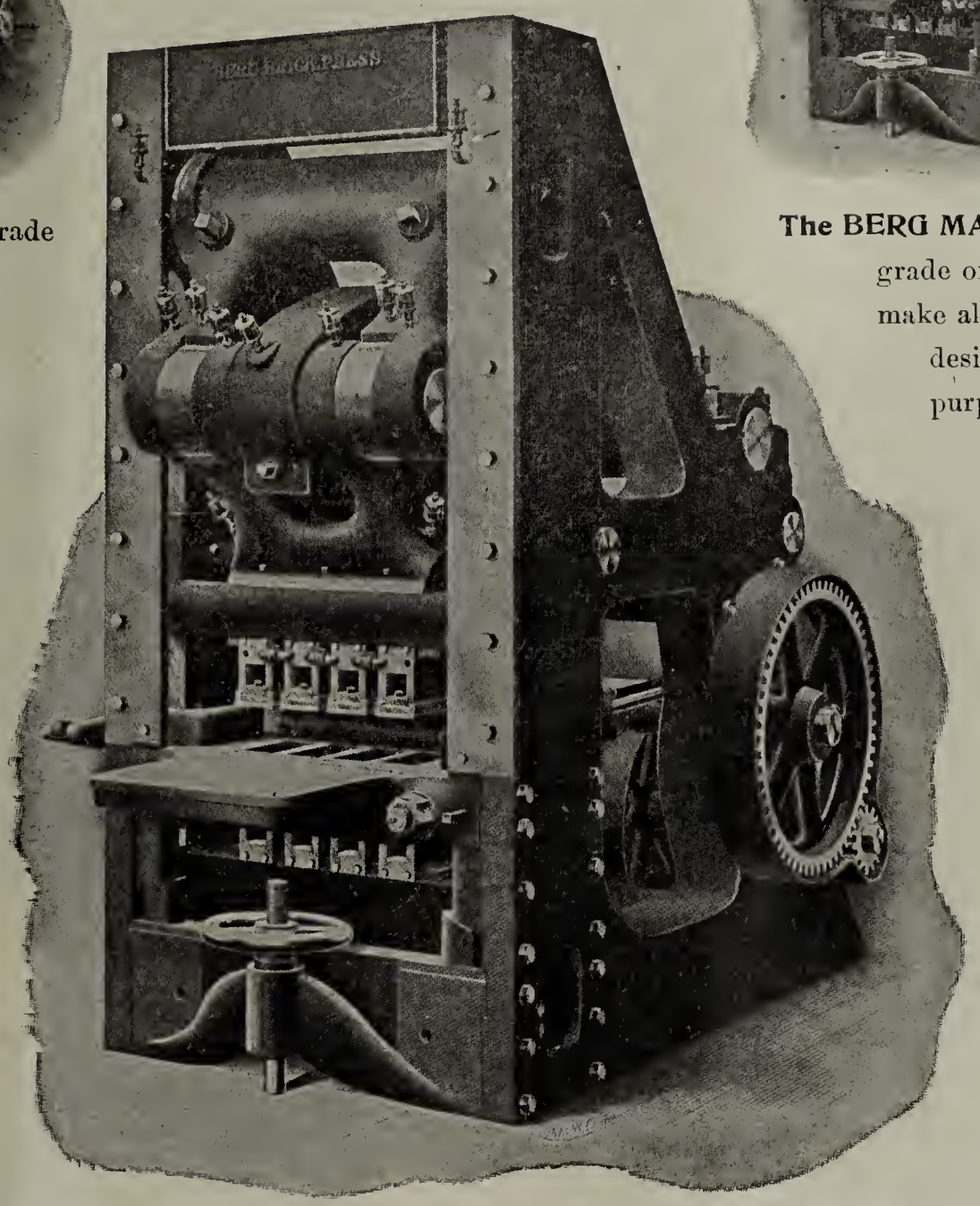
FULLERTON BUILDING, ST. LOUIS, MO., U. S. A.

BERG BRICK PRESS

The highest development of the Art of Brickmaking Machinery so pronounced by the United States Government.







The BERG for the highest grade of pressed brick of shale or clay. It makes all kinds of shapes and sizes of brick. Changes from one shape to another can be made in less than an hour's time.

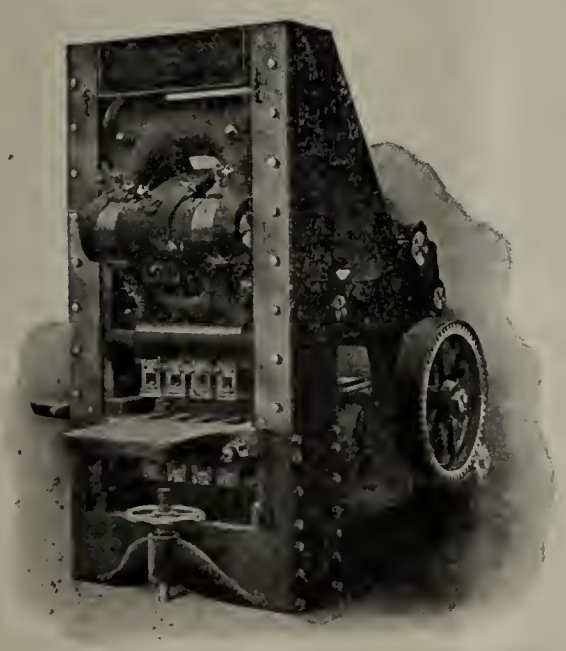
First-Class Workmanship. Cut Gearing. Fully Warranted.

The BERG makes the best sand-lime brick and cheapest because it is the strongest machine and gives the highest pressure. Thirty-five sand-lime plants in United States use the **BERG** Brick Press SUCCESSFULLY.

The BERG MAKES the highest grade of fire brick. Can make all kinds of shapes desired for fire-brick purposes.

Three distinct pressures make the brick evenly pressed all through. No granulated centers of the brick.

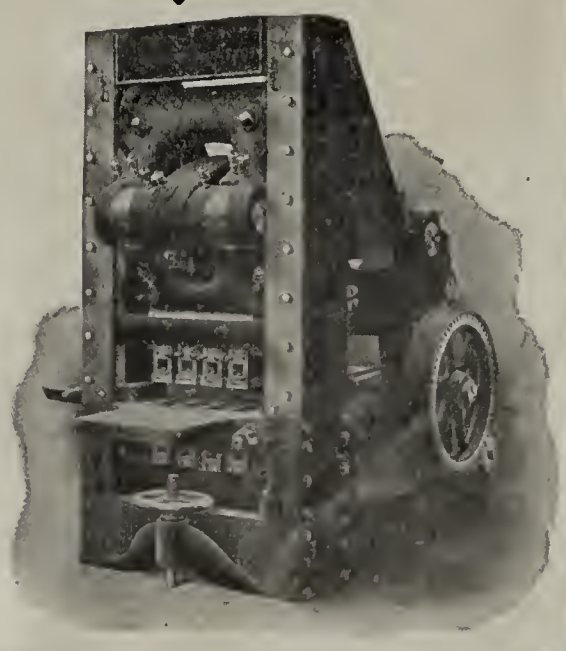
The BERG is the best for sand and cement because of its strong pressure. Uses less cement, makes cheaper brick.



The 1905 Berg Press

Many other steps further forward in improvement and highest grade of material and workmanship, also cut gearing. Fully guaranteed as to its success. Manufactured by its inventor in Toronto, Canada, at the Bertram Engine Works Co. Plans and specifications on the different kinds of plants furnished, also all equipments.

For prices and full particulars, address



A. BERG

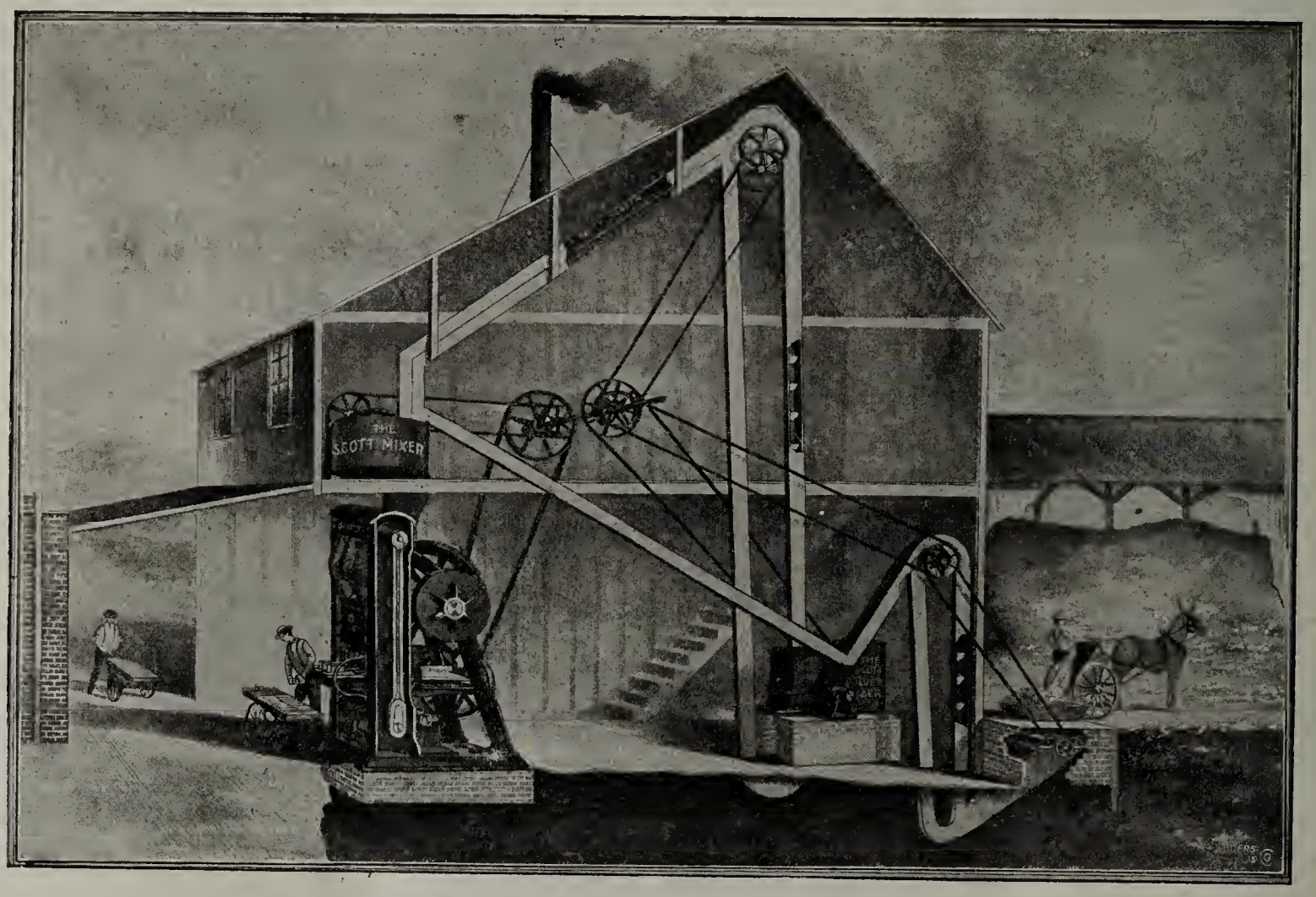
THE BERTRAM ENGINE WORKS

Toronto, Ontario, Canada

Rojestvensky

certainly was unfortunate, for while he had the knowledge of tactics within himself he was not backed up with the necessary *equipment, enthusiasm, organization.*

In waging our war against competition we claim that in our campaign we know that our facilities for manufacture are the very best; our organization is practically complete, and our enthusiasm—well, you can't imagine how strong that is unless you are operating an Andrus Press.

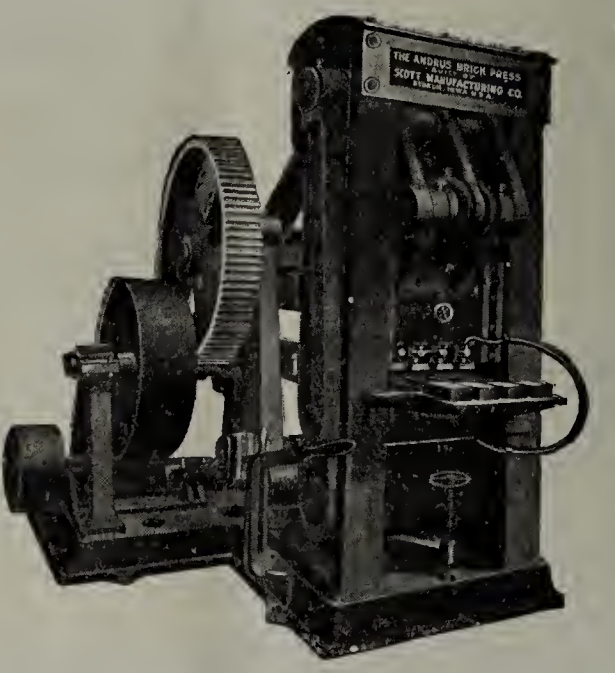


THE SCOTT NOISELESS PLANT.

We Install Complete Plants

Our Drafting Department Is At Your Service.

We cordially invite the brickmaker and capitalist to come to our city and see our presses in operation in the "St. Louis District," which is conceded to be the greatest Dry Press center in the world.



THIS IS THE PRESS THAT SCOTT BUILDS.

SCOTT MANUFACTURING CO.,

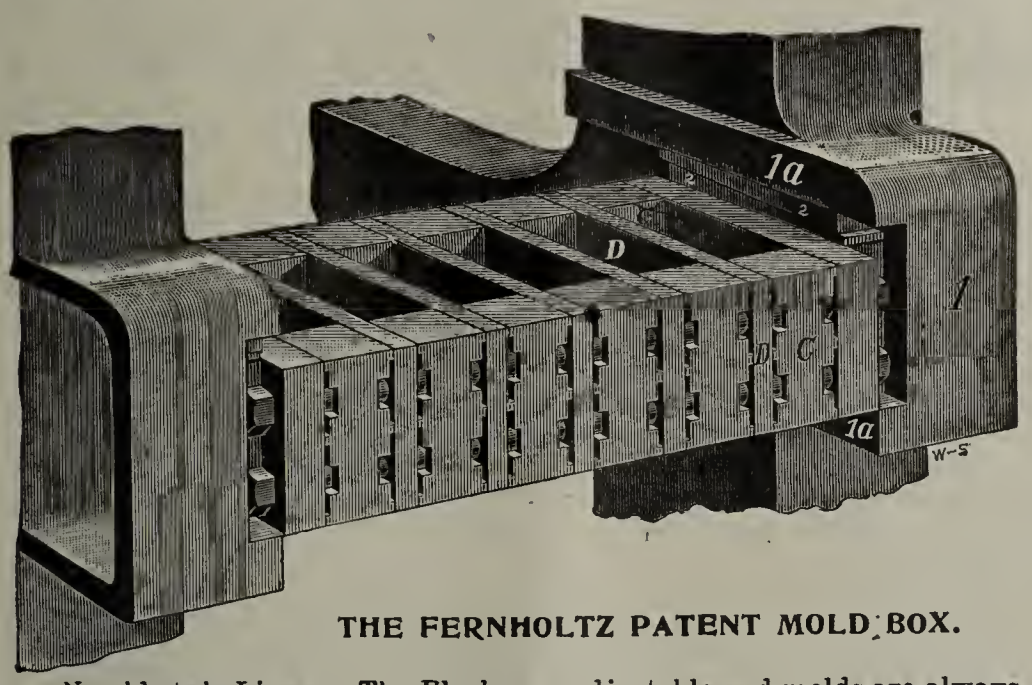
Commonwealth Trust Building, Saint Louis, Missouri.

The Fernholtz Brick Machinery Co.

Manufacturers of

The Celebrated Fernholtz Dry Press

Four mold Press 20,000 daily capacity. Six mold Press 30,000 daily capacity

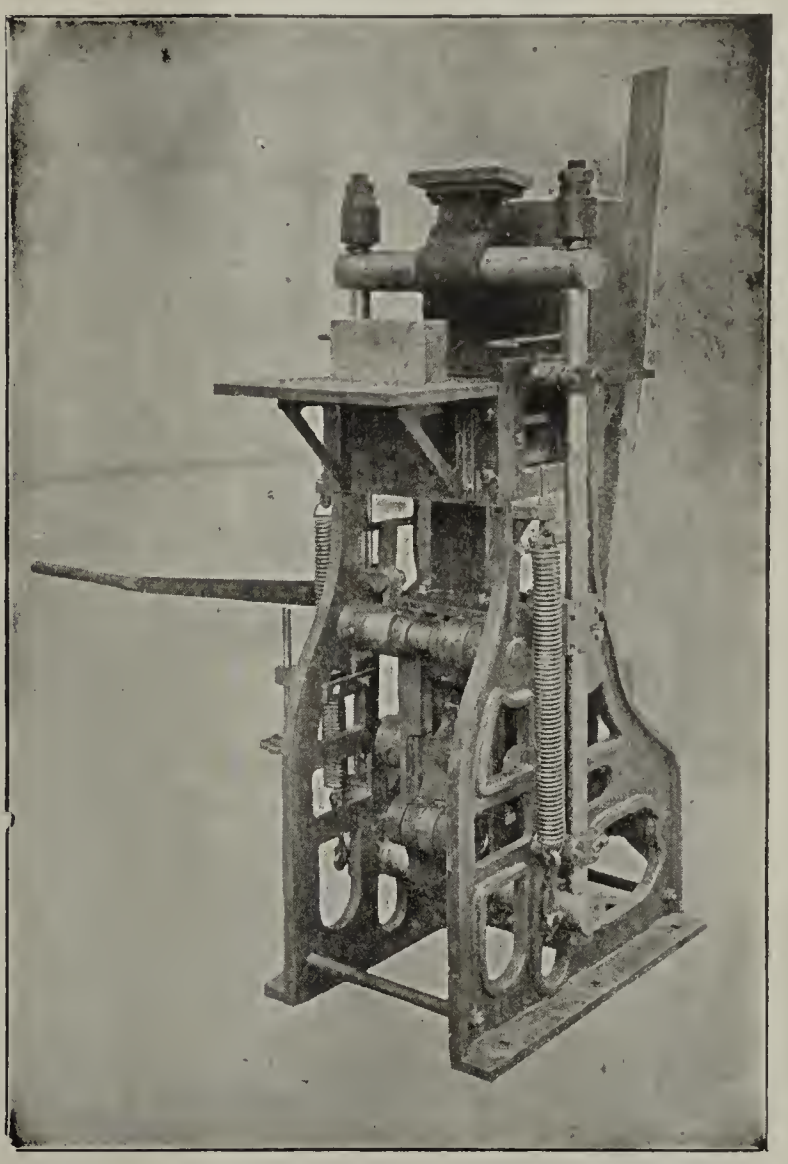


THE FERNHOLTZ PATENT MOLD BOX.

No old style Liners. The Blocks are adjustable and molds are always one size. We have put them in most all makes of Dry Press machines. Easily and quickly adjusted. They are made entirely out of chilled iron, the hardest known metal.

GRATH PATENT HAND POWER PRESS.

Especially adapted for ornamental designs. Any size brick up to 12⅝ inches long, 10 inches wide and 4¼ inches thick.
Brick set into kiln direct from press.

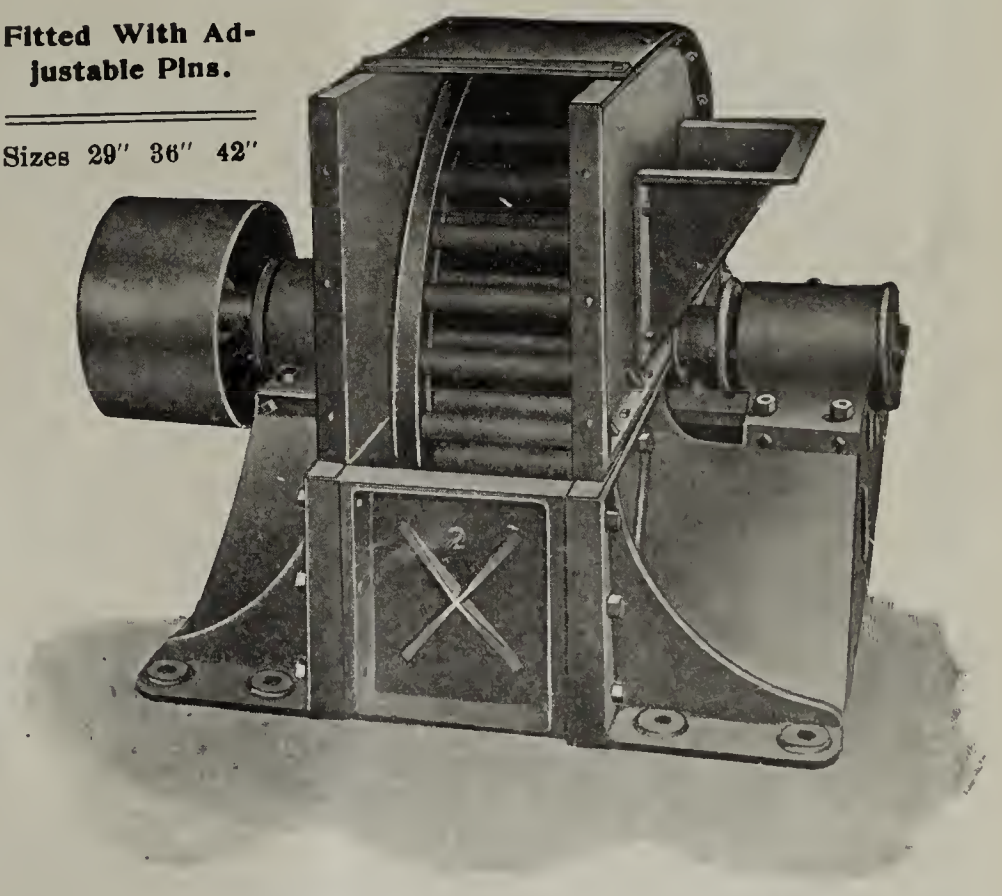


GRATH PATENT HAND POWER PRESS.

A GOOD MIXER IS ALWAYS APPRECIATED.

Fitted With Adjustable Pins.

Sizes 29″ 36″ 42″

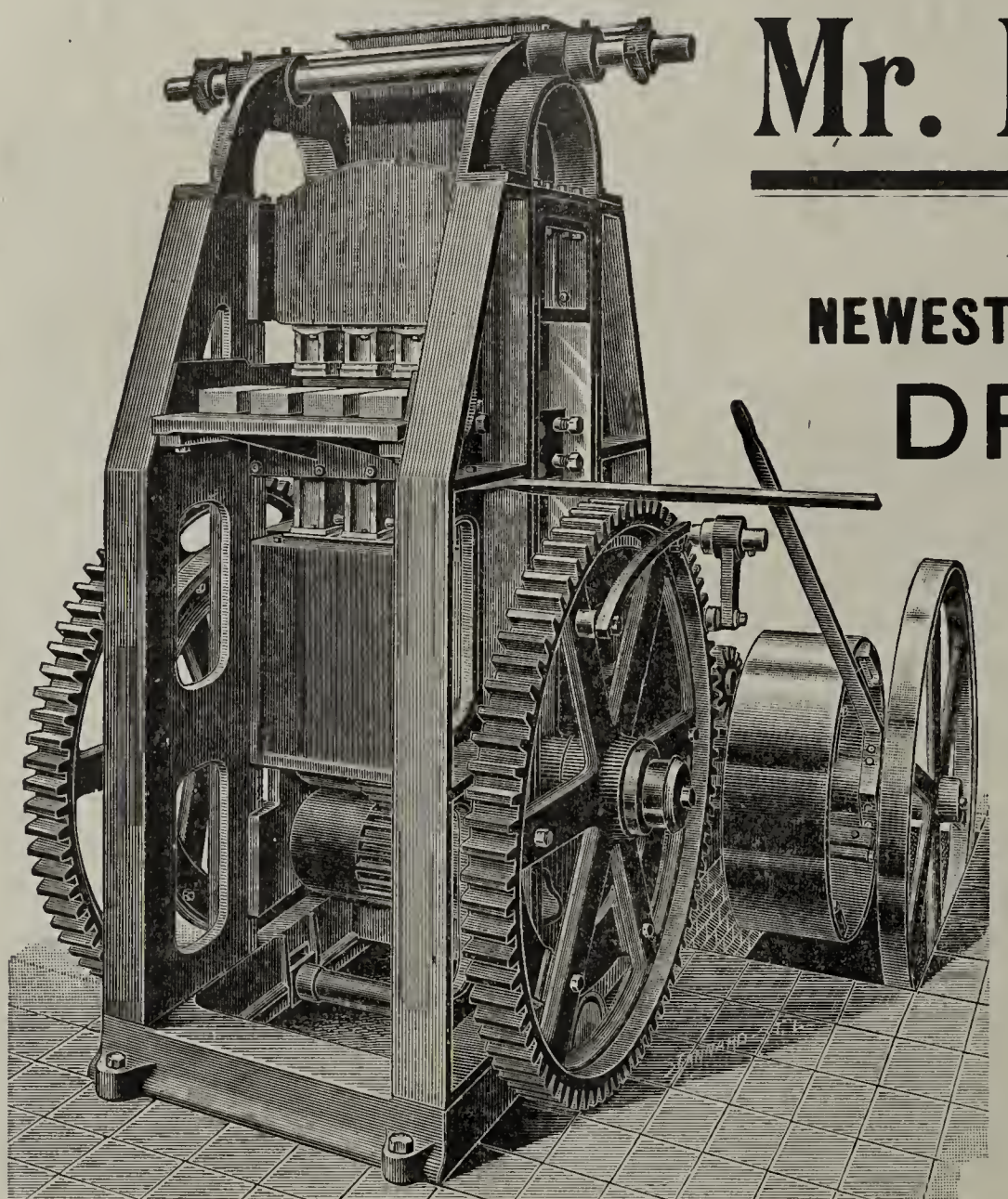


THE FERNHOLTZ CLAY PULVERIZER.

The Fernholtz Brick Machinery Co.

Cable Address "Fernbrick." Western Union Code.

Boyle Avenue and Old Manchester Road, ST. LOUIS, MO., U. S.A.



Mr. Brickmaker

Are you looking for the

NEWEST, BEST AND CHEAPEST IN

DRY-PRESS BRICK MACHINES?

If so, you cannot afford to overlook the strong points of excellence and the remarkable **simplicity, strength** and **efficiency** fonnd in

THE RELIANCE

"The Machine with a Future"

Radical departure from old principles.

Unique in construction, sound in principle, unrivaled in attainment!

Makes not only Brick but Money

A FEW POINTS:

1. Weight and Floor Space about one-half that of any other Brick Machine.
2. Compression of Clay Perfect and Uniform. (Entirely new Principle).
3. Every Brick is a Face Brick. There are No Granulations.
4. Adjustment permits any pressure desired (A Feature peculiar to the **RELIANCE.**)
5. Cheapest because having fewest parts. (Also cheapest to keep in repair).

EMINENTLY PRACTICAL AND ECONOMICAL

WRITE TO-DAY FOR PARTICULARS.

SEND CLAY FOR SAMPLE BRICKS.

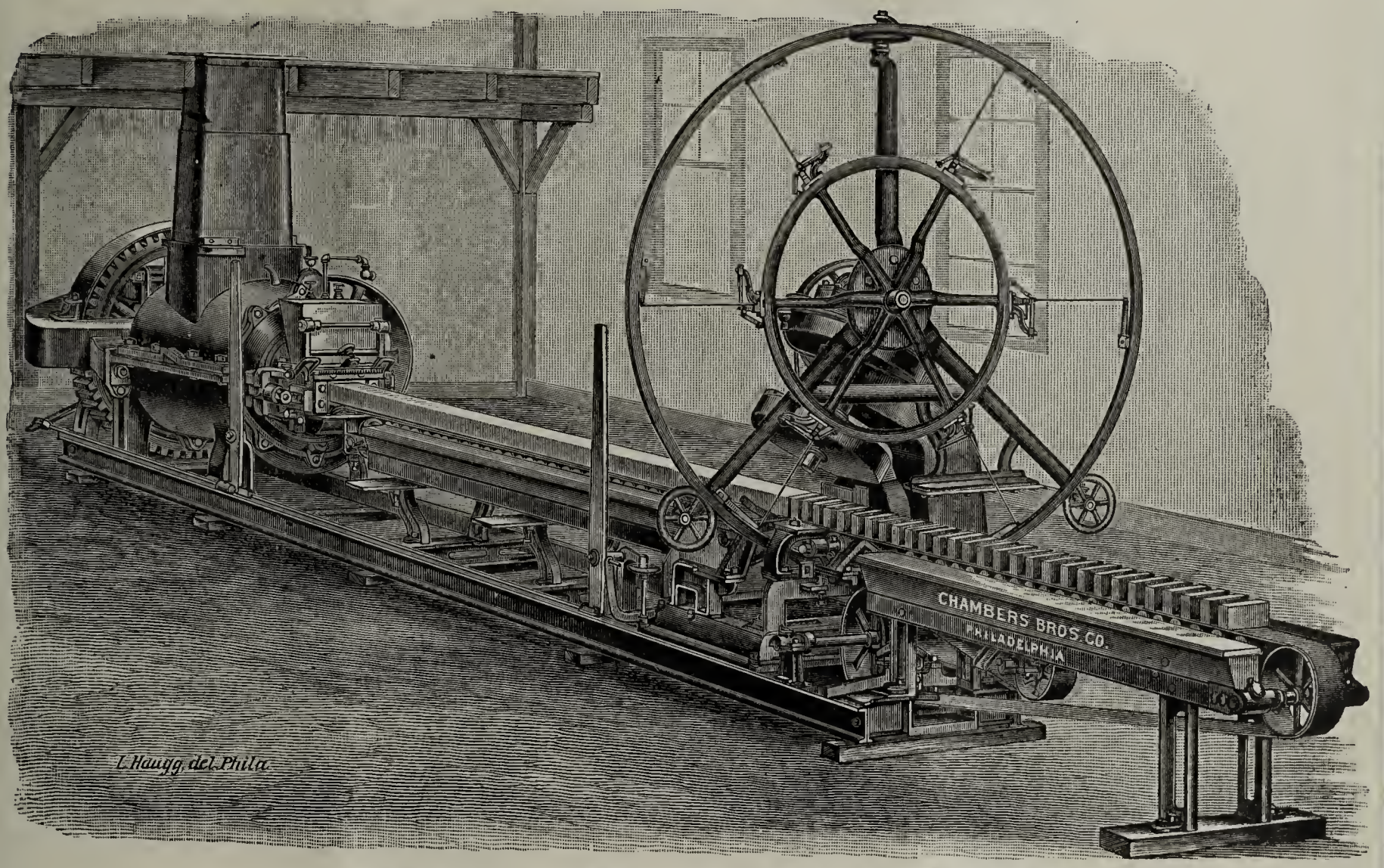
Made By the

RELIANCE MACHINE AND TOOL WORKS

ST. LOUIS, MO.

MACHINERY FOR BUILDING BRICK
AND FOR STREET PAVERS

ROUND CORNER PAVING BRICK WITHOUT REPRESSING



THE CHAMBERS AUTOMATIC SIDE-CUT BRICK MACHINE.

Automatic End Cut Brick Machines of five sizes, having capacity from 10,000 to over 100,000 brick daily under favorable conditions.

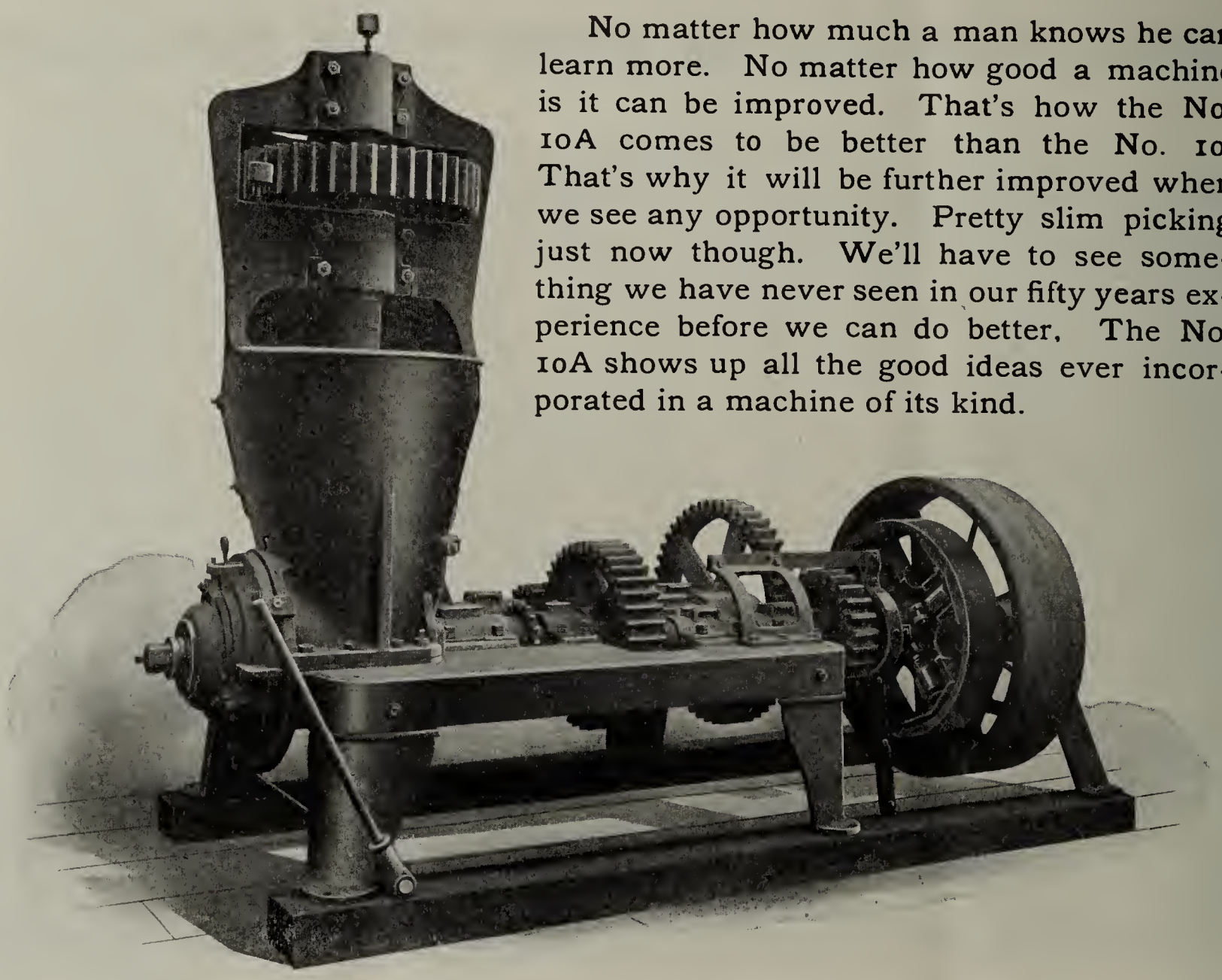
CHAMBERS BROTHERS COMPANY

52D AND MEDIA STREETS

PHILADELPHIA, PA.

E. R. FRAZIER, Chicago Agent,
59 West Jackson Boulevard.

IMPROVEMENTS



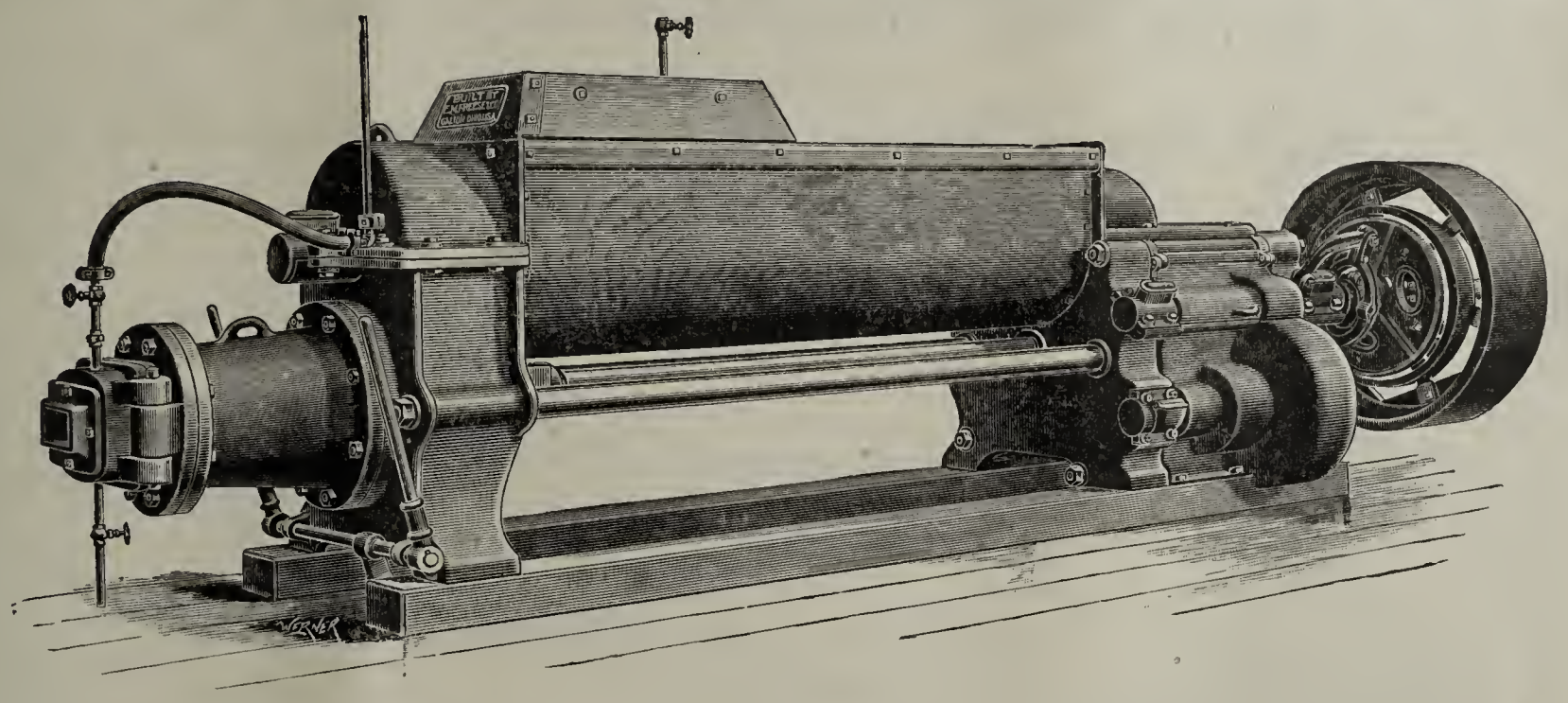
No matter how much a man knows he can learn more. No matter how good a machine is it can be improved. That's how the No. 10A comes to be better than the No. 10. That's why it will be further improved when we see any opportunity. Pretty slim picking just now though. We'll have to see something we have never seen in our fifty years experience before we can do better. The No. 10A shows up all the good ideas ever incorporated in a machine of its kind.

The New No. 10A

is a machine for making drain-tile, brick and hollow block, possessing particular advantages when two or more kinds of ware are to be made with a single outfit. It's built a whole lot better than any machine of its kind was ever built before and the service it gives is like its building. Better find out about it. It's worth your time.

H. BREWER & CO., TECUMSEH, MICHIGAN.

UNION BRICK MACHINES



We build these Machines in five sizes. Capacities to 10,000 brick per hour.

Several hundred are in everyday use. They do first-class work and are convenient, economical and durable. This can be verified by investigation.

We also build Brick Machines with separate Pug Mill.

Don't forget our Automatic Cutters. **They give satisfaction.**

State your requirements and let us furnish particulars.

E. M. FREESE & CO.

GALION - - - - OHIO

LAMINATION is the source of more loss, more worry and more anxiety than all other troubles of a brickmaker

KENTON C READ, Pres. ANDY O'CONNELL, Vice Pres. and Gen'l Mgr C. M. MILLER, Sec.-Treas.

THE

C. M. Miller Mfg. and Mining Co. Inc.

MAKERS OF

High Grade Veneer and Building Brick

Office, 331 Ohio Street.

New Phone 1142.

Terre Haute, Ind. Dec. 22. 1904.

Mr. H. L. Hix, Mgr.

The Wallace Mfg. Co., Frankfort, Ind.:

Dear Sir—I feel that I must tell you my experience with the brick made on the Intermediate Wonder:—

A few days ago a very prominent contractor asked me to bring him some samples of our brick. I fixed up some samples and started to his place, and just as soon as he saw them, he said: "I don't want them—they are no good; I would not lay one of that kind of brick," but I begged him to look at them and tell me why he did not want them. He asked me if he could break one of them, and I said, "Yes, break all of them." So he took his hammer and hit one on the corner; then he looked up at me and said: "I never saw a stiff mud brick like that;" then he broke it all up, just as nice as any brick, and he said: "That is the first stiff mud brick I ever saw without lamination," and that they were all right.

We are now selling our brick as fast as we can deliver them.

Pardon me for taking your time, and with SUCCESS to the WONDER, I am,

Yours very truly,

Andy Connell
V Pres and Gen Mgr.

In the event that you want to make brick filled with LAMINATION, CRACKS and CROOKS, a Wonder Machine will not answer your purpose.

THE WALLACE MFG. CO.

FRANKFORT, IND., U. S. A.

Highest point of perfection achieved by the **WONDER.**

It works clays where other machines fail.

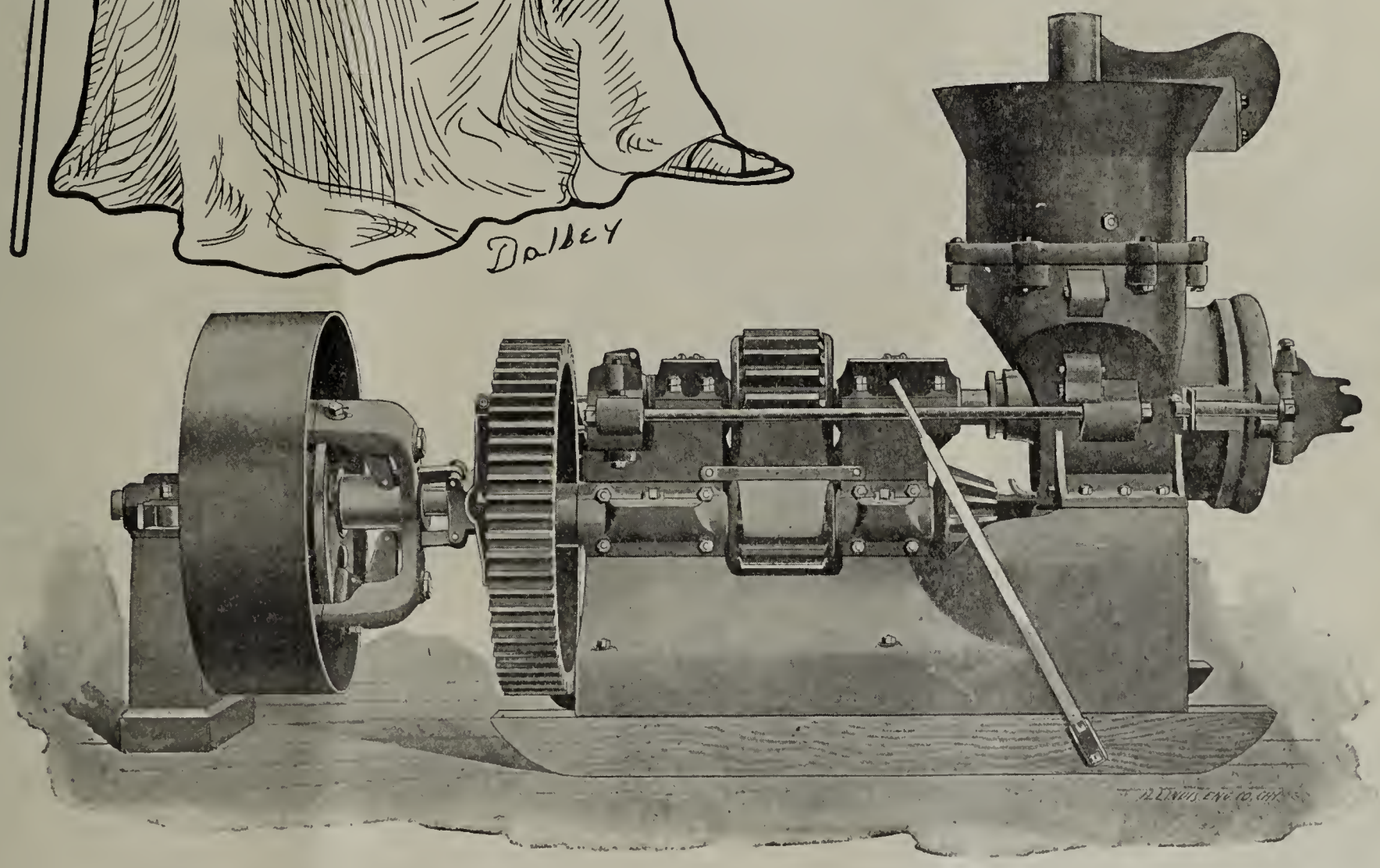
We are specialists in our line and difficult cases are sent to us for treatment.

Our experience has been large and varied, and may be of value to you.

Our service is yours for the asking.

Write us.

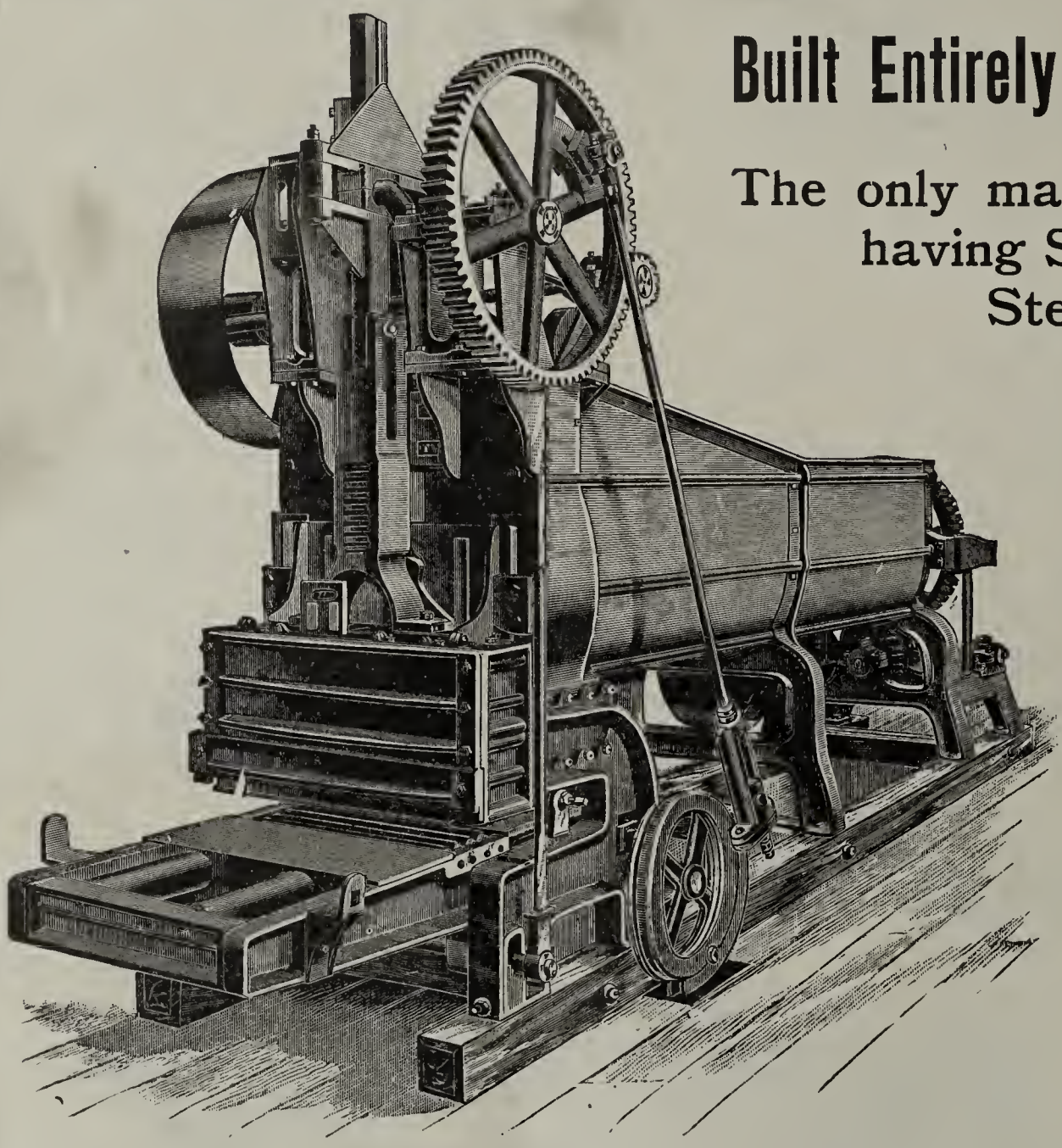
Our line is complete. We manufacture Brick Machines, Drain Tile Machines, Brick and Tile Cutting Tables, Automatic Cutters, Clay Preparing and Clay Reducing Machinery, and a full line of Brick and Tile Yard Supplies.



The Wallace Mfg. Co.

FRANKFORT, IND., U. S. A.

THE POTTS
HORIZONTAL BRICK MACHINE



Built Entirely of Iron and Steel.

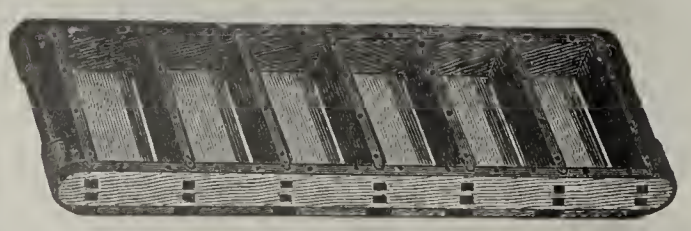
The only machine of this class having Steel Gear and Steel Shaft.

Built of the Best Material by the Best Workmen.

Simple, Strong and Durable.

No extra pug mill required to enable working the clay direct from the bank. Its great strength enables working the clay as stiff as practicable, insuring brick which will be STRAIGHT and SQUARE.

THE LEADER OF ALL SAND MOULD MACHINES.



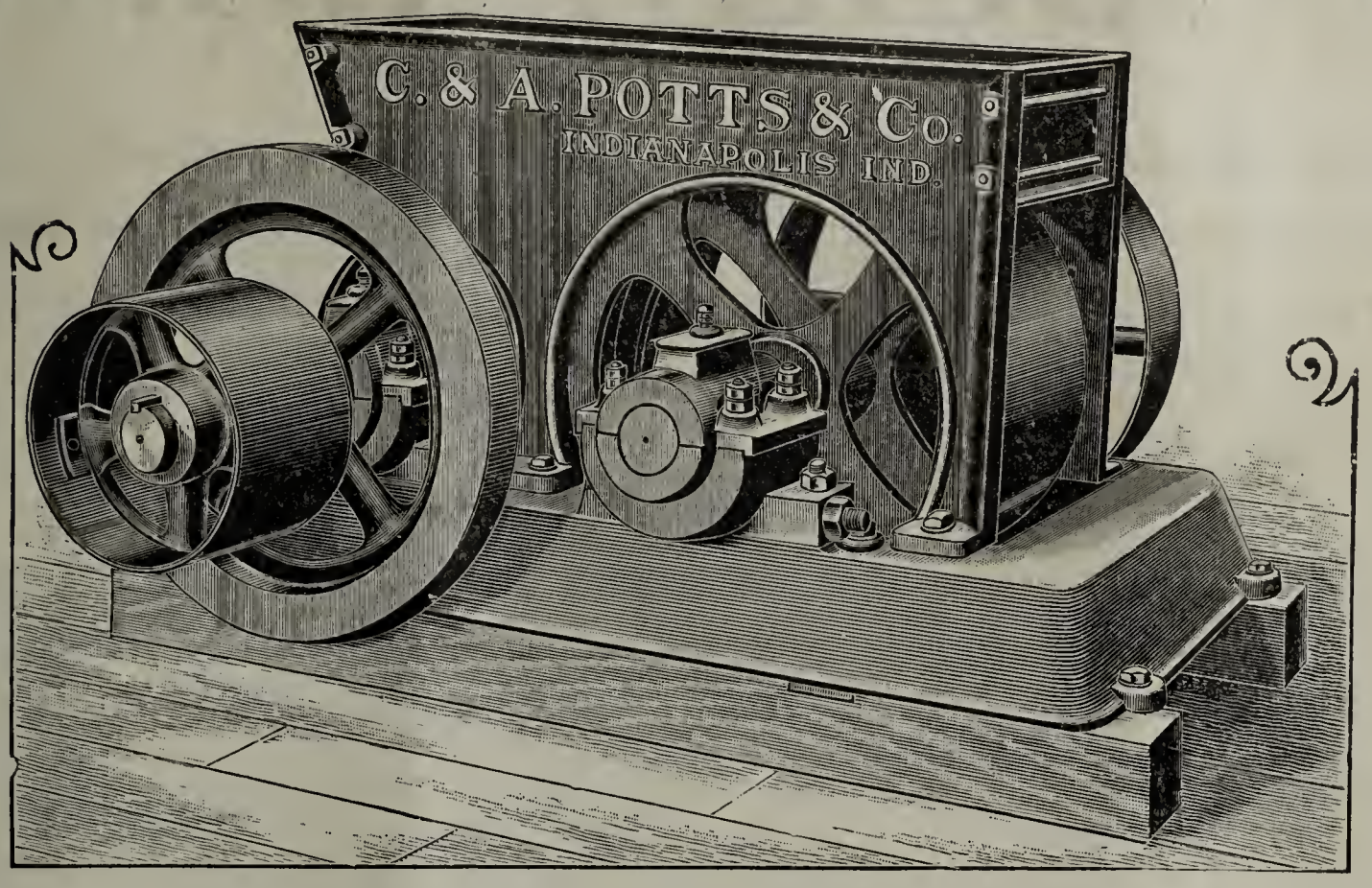
BRICK MOULDS A SPECIALTY

QUALITY IS OUR AIM.

We manufacture a complete line of Brick Yard Supplies. Write for prices.

C. & A. POTTS & CO., Indianapolis, Ind.

THE POTTS DISINTEGRATOR



Is not a spite machine, but is built the best possible. Having Heavy Chilled Rolls, Ring Oiling Bearings, Shafts of Steel and large in Diameter. The most successful machine for grinding out sticky clays and separating the stone.

THE POTTS MOULD SANDER

Simple in Construction,

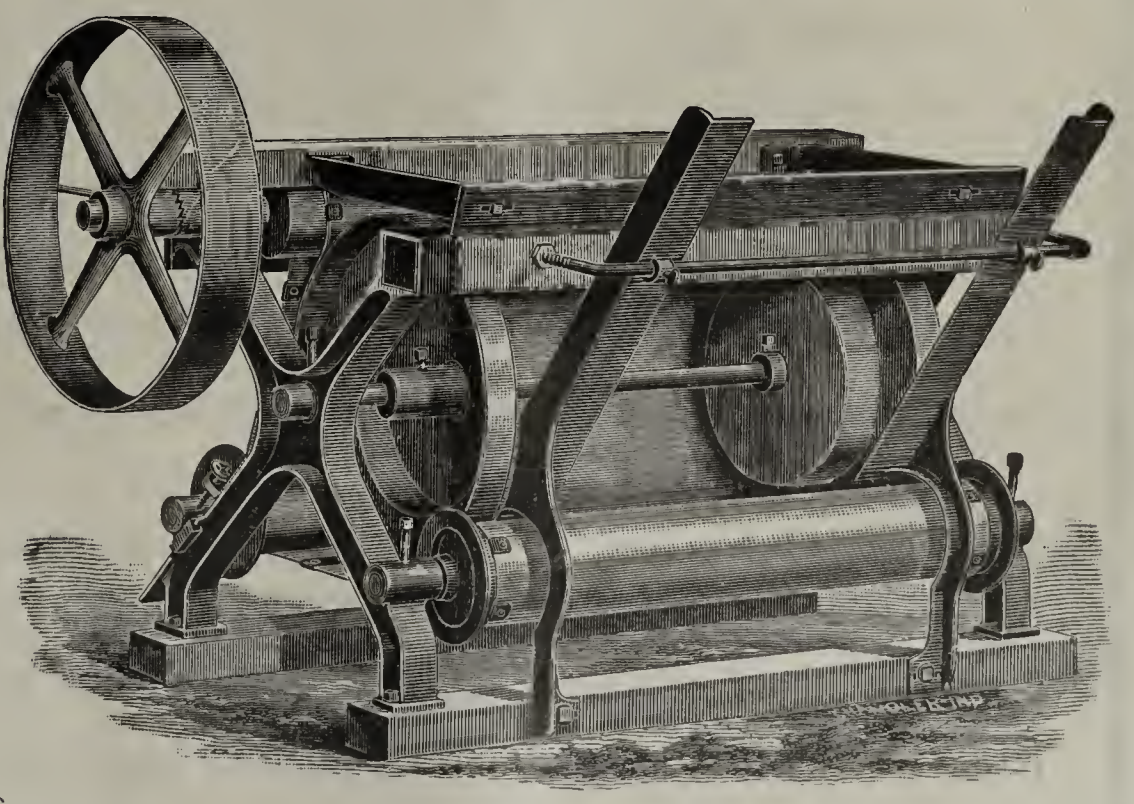
Strong and Durable,

Sands the Moulds Perfectly,

Never Strikes or gets Drunk,

Always Ready for Work,

No Brick Machine Complete without this Machine.



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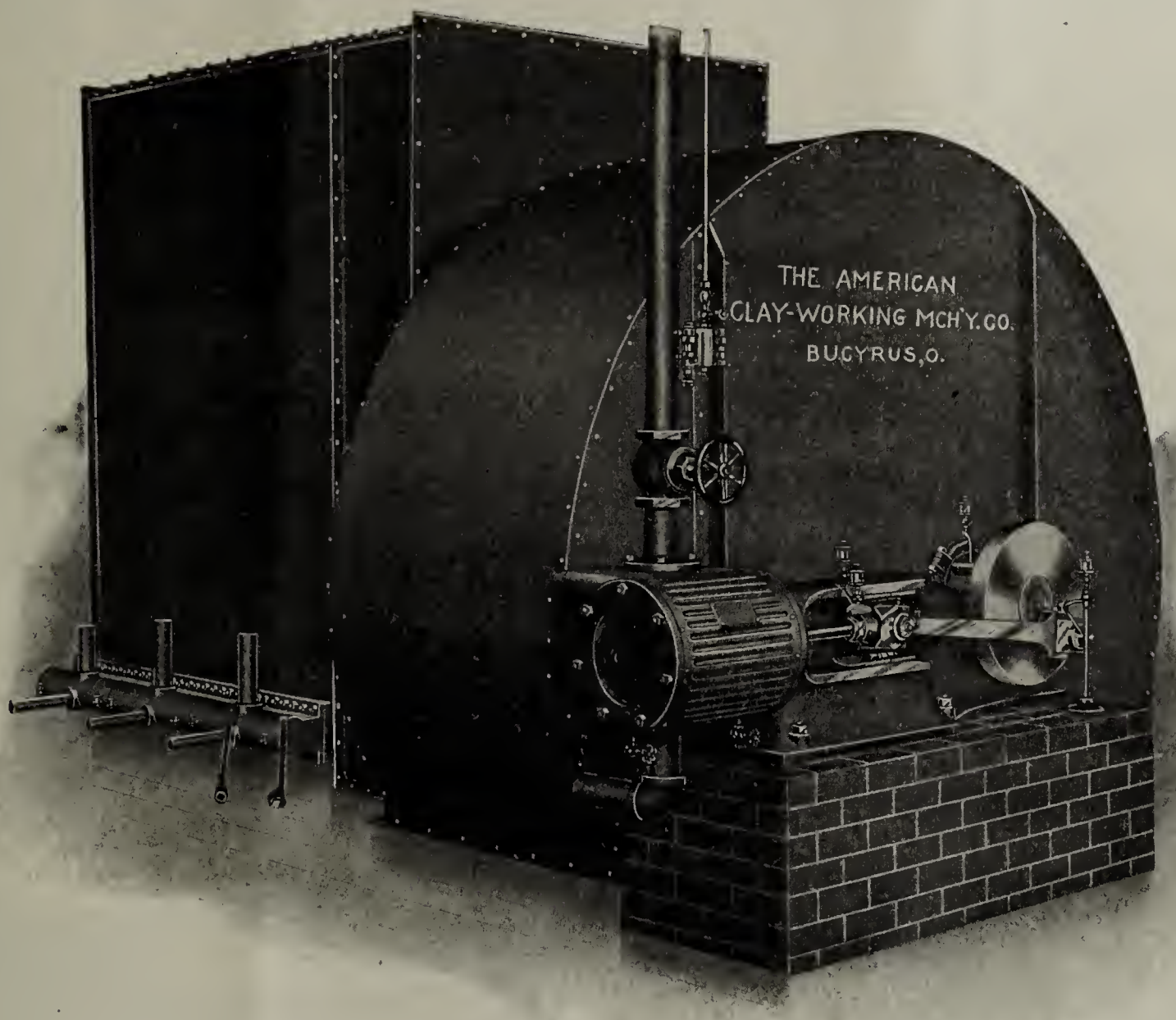

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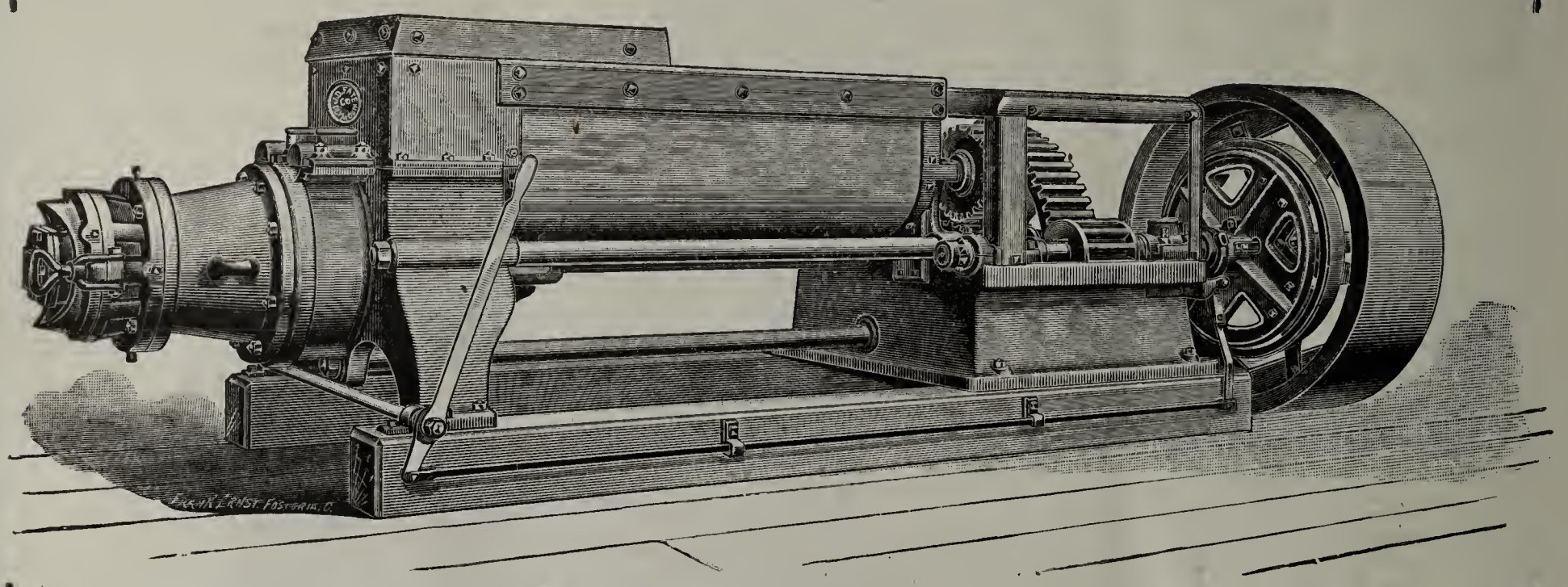

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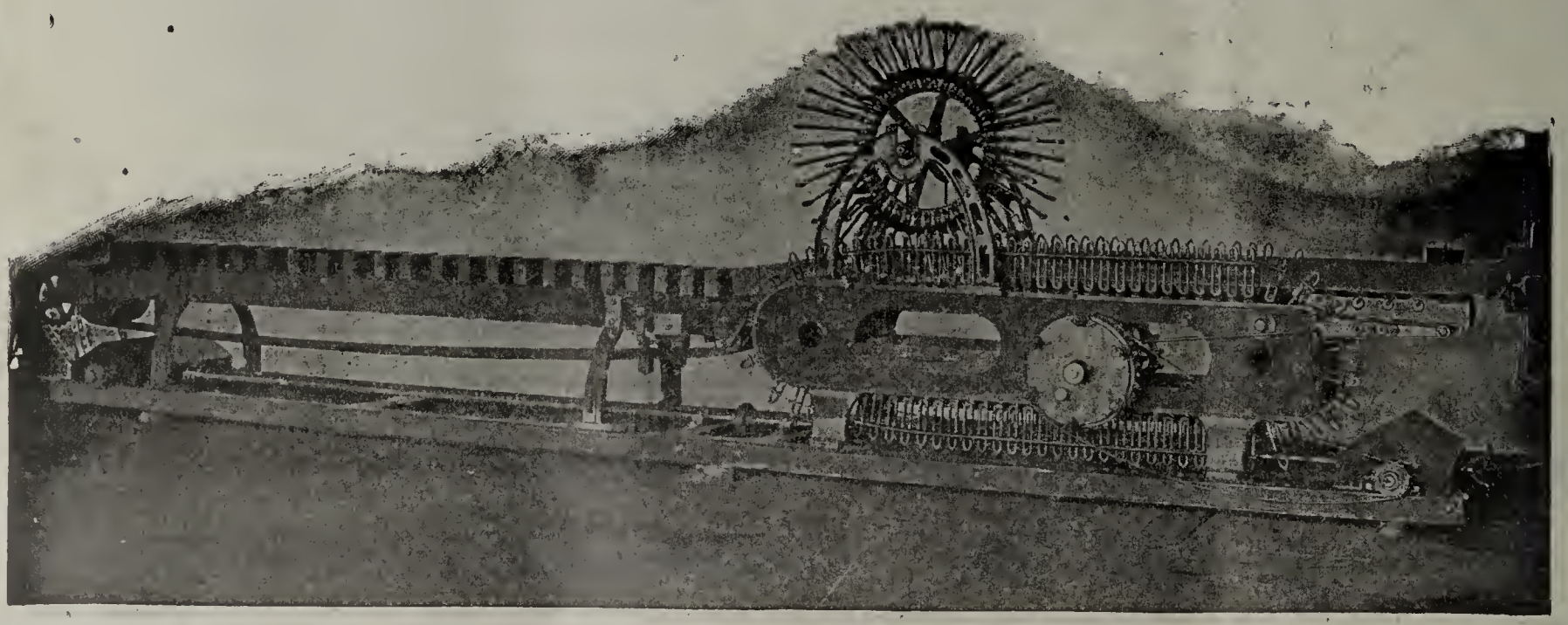

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THE LAMINATION OF CLAYS AND A REMEDY

When nature deposited clays, she showed the usual lack of consideration for the future man or the coming brickmaker.

Invariably we find that nature leaves us to puzzle out for ourselves, and only gives us an occasional indication or warning, and very little help.

I am, however, of opinion that nature has given us an indication, and that we get the most useful knowledge by taking a rapid survey of her methods in depositing clays, says Allen Tracy in the "Brick and Pottery Trade Journal" of London, England.

We here find that clay has been deposited by the action of running water carrying down to lower levels those particles of earth which are most readily carried in suspension and those salts which are carried in solution.

When we find these deposits in layers with clearly marked "ripples" on their surfaces we can tell they were deposited during a wind which dried the surface sufficiently to allow another deposit to rest without washing the former deposit further away.

We can also find that the action was intermittent, and that a dry season or high wind would also carry decayed vegetation and cover the surface with a dust which would stick to the clay and be again covered by the next rainfall or flood bringing further supplies of earth in suspension or partial solution.

The finer or coarser particles of sand were also carried by both water and wind and left on the ground to be again covered, and so on.

That each of these layers will readily part company can be proved by cutting a section and rapidly drying same; and this is, of course, more especially noticeable in some clays than in others, and it is safe to say that this cutting of a section and drying will enable us to determine how much the particular clay is prone to lamination.

We now come to consider the fact that a brick, whether plastic, wire-cut, re-pressed, semi-plastic or semi-dry, must be as equal in all its parts as possible; must be as *thoroughly ground and mixed* as possible, and as we have already proved that by its natural formation clay has been formed by deposits or layers, we must find the machinery that will most efficiently break up these layers and mix all the different earths, salts, sand and carbonaceous matter which constitute our clay.

We might at this point take a friendly lesson from the kitchen and watch the cook make "flaky pastry." We shall see that dry flour is dusted on to the rolled out paste and the paste is turned, lightly rolled, and this process of dusting, turning and rolling is continued, and that each layer will "laminate" during the process of baking. We therefore conclude that this is just what we must *avoid in brickmaking.*

Practical brickmakers know that digging and weathering has been nature's own method for breaking up the particles of clay, and even now there are those who believe this to be the best. Given succession of rains, frosts, drying winds and no great need for either hurry or economy, and any brickmaker who can rely upon *all of these* favorable considerations will no doubt make a brick free from lamination by this method; but he may also find the bricks made will show no more profits than cracks, and very few can afford to stick to these old methods.

I have allowed a foreman to make a kiln of bricks from well weathered clay and another from clay dug from the face, and properly ground and mixed, and asked him afterwards to show me the difference. He could not find any, but I was able to find a difference in the wages bill in favor of the bricks made "off the face."

We are therefore forced back to the question of finding the most efficient machinery to thoroughly grind and mix the most obstinate clay, and the first is certainly the pan.

The action of the revolving pan (or the stationary pan and revolving rollers) is certainly the best for *thorough grinding and mixing,* and when a pan is in use there is every provision for breaking up efficiently the original formation of the layers or filaments of clay.

The difference of the surface speeds of the two edges of the runners, and the surfaces of the two diameters of the

pan bottom, gives a grinding and kneading motion, and the slip or skip is the right action for good grinding.

A good pan will turn out clay fit for brickmaking free from any likelihood of future lamination, but the difficulty of getting the ground clay into the auger machine in this form has caused the brick-machine makers to introduce the one or more pairs of rolls over the pug or auger machine.

These rolls become very highly polished after working, and the tendency is then to again flatten out the clay into layers or filaments which are not at all likely to amalgamate in the barrel of the auger machine.

Many clays very readily take a polish on their surfaces when rolled out, and carbon, talc or French chalk, or even finely ground clay, will render the clay at this point very susceptible to show polished and semidry surfaces.

If a modeller was working up a piece of solid work he would not use clay just as we see it come from the rolls without wetting the surfaces and perhaps roughening the surfaces, but as a rule no provision is made to wet the surfaces as the filaments of clay enter the auger machine, and this, I am sure, is a very fruitful source of lamination. I have overcome this difficulty by the introduction of a jet of steam or a spray of water immediately under the bottom roller to moisten the surfaces of the filaments of clay, and have found it answers well. It requires careful regulating, but when once the right quantity is proved it is not any longer difficult to manipulate, and is a simple way of getting over the trouble.

I know a case in point which serves as a good illustration. A firm of brick and tile makers were grinding with a pan and were not satisfied with the surfaces of their re-pressed tiles. The clay was not fine enough to show a good surface, and so they were advised to introduce a pair of rolls over their auger machine, set very close to further grind the clay, and they went ahead with this improvement (?) by making about 20,000 tiles.

Nothing else was changed and they had no fear of a bad result. The clay was cut in the usual way with wires fitted on to die, and also cut off at the table. The wire cut pieces were then re-pressed, dried as usual and set in the kiln.

But the result of the first burning was fatal, and not a single sound tile was drawn from that first kiln.

The tiles looked as if they had been made up of leaves of paper, and not only parted but refused to carry the weight, breaking up at the bottom of the kiln and sinking and falling over.

The introduction of a steam jet completely cured the trouble, as it was only because of this polishing of the surfaces of the filaments of clay as they came from the smooth rolls which prevented the clay from properly amalgamating.

We might therefore say with confidence that no grinding and mixing can be *too thorough to ensure a sound brick.*

That the one thing to avoid is trying to make *dry or semi-dry surfaces stick together without moisture.*

Of course there are many other difficulties that the brickmaker has to fight, but they would not be very great if these two main considerations had been fairly overcome, and might be touched upon to make this article more complete, although not strictly entitled to be treated under this heading.

If a clay is so dense as to shrink as much as three-quarters of an inch to one inch to the foot, it would be safe to add a proportion of ground burnt brick, sand, or clinker, and a freedom from cracks would follow.

If a clay contained a proportion of carbonaceous matter it would turn black in the center if burnt too rapidly, and either break up or swell, unless a proportion of burnt brick or clinker or sand was mixed with it to allow the carbonic acid gas to escape before the outer surface of the brick had become too hard. Extra slow firing would have the same result by allowing the gases to escape.

This is a difficulty met with amongst poor quality fireclays.

I mention this because it would look as if the clay had not been thoroughly amalgamated when a brick comes from the kiln both out of shape and cracked, but I have proved on many trials that the same mixture will remain quite sound and of good color right through if slowly burnt, providing that it is only the presence of a gas that must escape that caused the cracking and swelling; and this is quite distinct from moisture, as a white dry brick (kiln dried) will blacken in center and swell, and will also blacken where it is in contact with another surface which prevents the gas from escaping. Also if this brick is burnt rapidly it will "boil" and flux in center.

A further proof is that the blackened and cracked brick is heavier when burnt than the same size brick burnt slowly.

I have left the question of the soluble and insoluble salts, as I do not consider their presence or absence much affects the question of lamination but rather is a question of color.

A LARGE GOVERNMENT CONTRACT.

The Federal Clay Products company, a subsidary corporation of the Pittsburg (Pa.) Coal Co., has been awarded a contract for supplying brick for the Panama canal. Thomas Hampton, superintendent of the company's plant at Large, on Peters creek, left for Washington, D. C., to sign the contract for the company. The order means 6,000,000 pieces if the company's big block brick are used or 12,000,000 if the ordinary sized brick are used. The brick will be shipped to New Orleans and there loaded on steamships. It has not been decided yet whether the shipments from the plant here will be sent by rail or river to New Orleans. A plan for shipping to Baltimore and loading on steamers there is also under advisement.

The order will keep the plant running night and day until next June with a full force of men. An electric light plant is being installed to enable the night work to go on as expeditiously as in day time. Mr. Hampton also reports that his company recently secured the government order for brick to be used in public work in the District of Columbia. In each case the orders were secured by competitive bidding, other large concerns being especially anxious for the work. The force of men at the plant will be greatly increased soon.

THE USE OF SAGGER IN FIRE-BRICK MAKING

Herr Cramer has recently published in the *Tonindztg* an interesting report on the relative porosity of mixtures of clay and burnt sagger after firing it. It is generally understood that one of the chief objects of adding sagger to clay is to "open it out" and make it more porous, but the experiments recently made by Herr Cramer do not confirm this view.

It is, of course, necessary to distinguish between two kinds of porosity—that of the clay before firing, and that of the finished article. The purpose of the experiments was to ascertain the best methods of preparing bricks, etc., of the greatest possible resistance to molten slag, glazes, and similar masses, the effects of which are directly proportionate to the surface exposed. As the surface of a solid is increased with increasing porosity and diminished with increasing density, it follows that the bricks for such purposes should be as close-grained and dense as possible. The clay particles being usually much finer than those of sagger, it might be supposed that an increase in the proportion of clay would effect the desired increase in resistance to slag. The clays tested were five well-known German fire-clays, and the burnt clays were of the same materials, ground, after firing, to an average size of 1-25 in.

The density of the bricks made was tested by means of the water absorbed by them, and the following results were obtained—the figures expressing the percentage of water absorbed:—

Clay: Sagger.	A. Halle clay.	B. Groeden clay.	C. Saarau clay.	D. Schwepnitz clay.	E. Vallendar clay.
30:70	22.2	14.2	12.0	11.9	8.4
35:65	21.2	14.1	11.0	10.3	7.9
40:60	19.7	13.7	11.9	12.0	7.9
45:55	18.9	12.8	11.7	12.1	7.1

From these figures it will be seen that the porosity differs with each clay, and it does not change regularly with a change in the proportions of clay and sagger, though clays A, B and E are the most regular in this respect.

In the case of clay D (a fat Schwepnitz clay) it is seen that when a certain percentage of clay in the brick has been reached, any further increase diminishes the density instead of increasing it. Clay C shows a similar characteristic, though not so strongly marked. It is noteworthy that with both these clays the maximum density (*i. e.*, the minimum water absorption) is reached by the mixture containing 35 per cent. of clay and 65 of sagger. In clay E it is curious that although the density, on the whole, increases with the proportion of raw clay, yet there is but little advantage to be gained by allowing more than 35 per cent. of clay in the brick.

These results are somewhat difficult to account for, though it is highly probable that the high binding power of clays C and D, combined with their great shrinkage on drying, may be in large measure responsible for them. It is not improbable that with the larger proportions of plastic clay small cracks are produced which increase the apparent water absorption. It is well known that the use of a highly plastic clay is not to be recommended for furnace linings, and that the makers of fire-bricks prefer a mixture of clays in order that the leaner ones may reduce the plasticity of the others.

The lesson to be learnt from these experiments is that the addition of more clay will not necessarily result in the production of a closer brick, and that clayworkers would be wise to try for themselves exactly the best proportions of clay and sagger most suited for their purpose, as if these are merely guessed at, money may be wasted by the use of an unnecessary proportion of the dearer material. Which is the dearer will depend on the materials from which the burnt sagger is obtained. In some yards this is obtained as a waste product and costs nothing; in others clay has to be specially burnt for the purpose. In either case, the matter is worth attention, and the tests are easy to carry out. It is simply necessary to weigh a brick of the composition to be tested, place it in a basin of water until all but the top is covered, leave it thus for ten or fifteen minutes, cover it completely with water, and leave it for half an hour. The brick is then taken out of the water, wiped dry as rapidly as possible, and again weighed. The increase in weight will be due to the water absorbed, but to ensure reasonably accurate results, eight or ten bricks should be treated in this way, and the average increase per cent, taken.

It is, of course, necessary, in comparing different mixtures of clay and sagger, that they should all be burnt at approximately the same heat, otherwise the results will be valueless, as it is not reasonable to compare a hard-fired brick in which partial vitrification has set in with one which has only just been warmed through.

ADDS TO ITS HOLDINGS IN WINNIPEG.

The purchase of Couture Bros.' brick yards, in St. Boniface, Manitoba, by the Alsip Brick, Tile and Lumber Co., has been completed. The price paid was $24,500. The purchase includes the brick yards and a ten years' lease on the clay lands. This clay is said to be very suitable for the making of tile, fireproof wall material and floor lining. Heretofore these materials have been imported from across the line or shipped in from the east at great expense.

One of the yards is equipped with a modern auger brick and tile machine, which makes bricks, tile or fireproof construction material by merely changing the dies. The steam dryer, which utilizes the exhaust steam to heat a large coil of steam pipes, is used to dry the manufactured material. Air is forced through the pipe by a 72-inch fan. The dryer will permit of operations being carried on two months after outdoor yards are shut down on account of frost. In the spring, work can be begun six weeks earlier than in outdoor yards—a valuable feature—as there is always a shortage of brick in the beginning of the season.

The purchase increases the output of the Alsip Brick, Tile and Lumber Co. to one-quarter of a million bricks per day—the largest daily output of any one firm in Canada. The company has taken steps to secure incorporation in the sum of $200,000.

A NEW SAND-LIME BRICK PLANT.

The Menominee Brick Company of Menominee, Michigan, was organized during the last winter with the following officers in charge: G. A. Blesch, president; A. J. Pick, vice-president, and Alfred A. Henes, secretary, treasurer and general manager. These gentlemen with the exception of Mr. Pick are well known business men of Menominee. The organization was for the purpose of making into sand-lime brick the large sand deposits owned by them. After the examination of nearly all the systems used in the country for the making of sand-lime brick it was decided by the directors that the American System should be installed and a contract was made with the American Sand-Lime Brick Company of Chicago for a complete outfit, with the exception of the buildings.

View of the Plant of the Menominee Brick Co., Menominee, Mich.

The sand is a fine bank-sand deposited in a hill directly behind the buildings. The bank is higher than the building and the sand is spouted from the bank to a rotating sand dryer on the first floor and from there conveyed to a storing bin on the second floor where the sand is cooled, as with the cooled sand the wear of the conveyor belts is reduced and the moisture is more easily regulated and from there it is again spouted to a measuring machine which measures off the proper proportions of sand and hydrated lime which also is spouted to the measuring machine. The proper proportions being regulated by a measuring device. The mixture contains from 4 to 8 per cent of hydrated lime, according to both the quality of the sand and lime. The measuring device consists of a sliding hopper with two compartments to which a horizontal reciprocating motion is given. At one end of the stroke the sand compartment is filled and the lime compartment discharges through the spout to the mixer, at the other end of the stroke, the sand is discharged while the lime compartment is refilled. The materials are all screened before entering the hopper. From this measuring machine the sand and hydrated lime are delivered to a mixing machine.

The mixer is 16 feet long, having a shaft fitted with blades which mixes the materials and passes them to the end where it is again raised by an elevator to the upper moistener or wet mixer and from there fed to a special sand-lime brick press and made into brick four at a time. The pressure on each brick being from 75 to 100 tons, varying with the degree of moisture.

As the brick come from the press they are loaded upon special steel sand-lime brick cars, from 900 to 1,000 brick per car and from there they are run on the tracks to the Hardening Cylinder. Twenty cars or one day's run completely fills a cylinder, making from 18,000 to 20,000 brick daily. The cars can be run in as fast as loaded and the entire train is hauled out by cable which is operated by a steam winch. The door of the cylinder is of steel, bolted and clamped to a steel ring on the end of the cylinder hinged from the top and operated by cable and winch same as the cars. The length of the cylinder is 66 feet, built of steel and 6 feet in diameter. The steam is thrown into the cylinder during the night and in 8 to 10 hours the cars are ready to be taken out. Steam pressure being from 120 to 125 pounds.

The lime hydrating is done by placing the lime in a lime box that fits beneath the cars and between the tracks of the cylender, the wheels of same running on the flanges of the rails. Enough lime is in the cars to make the brick for one charge. The lime is hydrated while the brick are being dryed above.

The equipment consists of a Rotary direct heat dryer, Mixing, Measuring and preparing machine Conveyors. A Special Sand-lime brick Press, Twenty Special Sand-lime brick cars, the same number of lime cars, a 66 foot Still hardening cylender and several hundred feet of track, besides the power plant, a 150 horse power boiler and a 75 horse power engine.

The brick are of a uniform granite gray color, but coloring matter can be added to the mixture to produce any other color desired. The brick have a close grain and fine face, strong edges and corners, so that they are fine for face work in the best buildings. They are made of the standard size and average a little over 5 pounds per brick. They are very dense with only an absorption of 5 to 8 per cent of water, besides having high compressive strength. They have high fire resisting qualities.

A ready market has already been found at Menominee and Marinette for these brick and the company has orders ahead for months to come.

NORMAL RATES RESTORED ON ALL LINES.

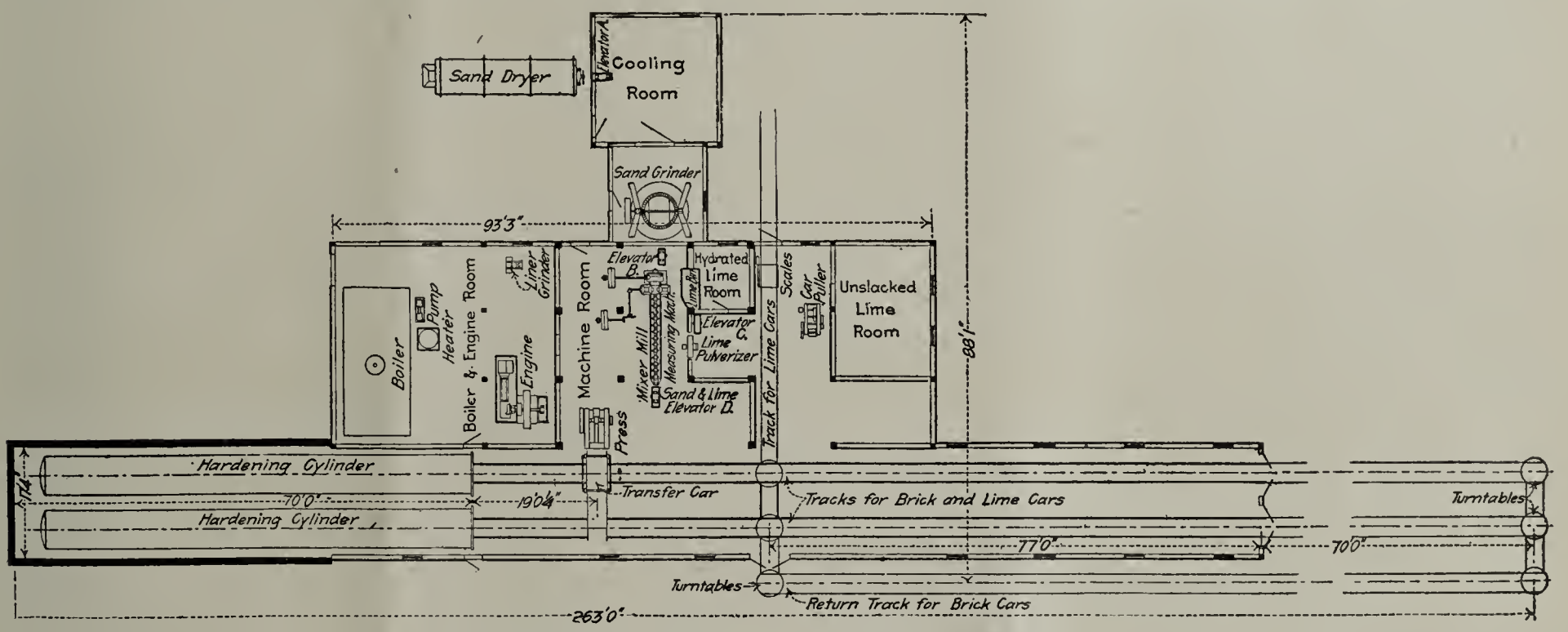
Normal rates have been restored by all lines between Chicago, Buffalo, New York, Boston and other Eastern points, and the Nickel Plate Road is still prepared to furnish strictly first class service between Chicago and the East, in their three daily through trains to New York and Boston, at rates as low as obtain by any other line. Meals served as you like, in the dining car, either A la Carte, Club or Table de hote, but in no case will a meal cost more than One Dollar. Our rates will be of interest to you, and information cheerfully given by calling at No. 111 Adams Street, addressing John Y. Calahan, General Agent, No. 113 Adams St., Room 298, Chicago, or 'phoning Central 2057.

THE PALMER COMPANY INSTALLS THEIR OWN PRINTING PLANT.

The Harmon S. Palmer Company of Washington, D. C., have just fitted up three rooms in the basement of their new offices in which they intend to install a printing press with all necessary equipments. They are already operating a small press with good results.

The new catalogues descriptive of their self-closing-adjustable-automatic building block machine is well under way, which is the beginning of a new epoch in the history of hollow block construction. The universal publicity and experience of the last two years is now beginning to bear fruit of a wholesome kind and the great increase in their business is proof that the mind of the general public about the industry is beginning to settle.

Two additional patents have been allowed to this Company for improvements in building with hollow blocks.



Plan of a Double Cylinder Sand-Lime Brick Plant.

What promises to be of great interest to many people of Washington is the organization of a proposed Company to build cheap and sanitary houses with these blocks, which can be rented to the occupants of the cheap wooden houses so prevalant in many parts of the city. This Company will erect good substantial two story buildings of good architecture and fire-proof which will be rented at a profit not to exceed nine per cent. on the investment. Money can be had at from four and one-half to five per cent. and when invested in this kind of property is well secured besides giving a fair income. To many persons in this city as well as most other cities, this will be a welcome boon and is worthy the support of every person who has a bit of philanthrophy in his blood. A great deal of Washington property is netting the owners from fifteen to twenty per cent. and the same is likely in other cities, when, by a little concentrated action, property owners could and should be more liberal and erect for those who desire to live in better dwellings something nice and cheap at a fair profit on the investment. This is a most vital question and should receive the attention of every public spirited citizen, and especially those who have the city's health to look after.

DES MOINES AS A CLAY MANUFACTURING CENTER.

By T. E. Savage, Assistant State Geologist.

The successful manufacture of clay products in commercial quantities depends upon three factors; a large supply of raw materials adapted to the making of clay goods; an abundance of cheap fuel of good quality, and favorable railroad facilities for the distribution of the ware.

There outcrop in and adjacent to the city of Des Moines unlimited quantities of shale and clays suitable for the manufacture of all grades of construction brick, hollow blocks, conduits, the various kinds of tile, vitrified ware, and the coarser grades of pottery. These raw materials are furnished from two geological formations. The shales which are interstratified with the beds of the coal measures come from what is known as the Des Moines stage; and the less indurated clays, which consist of loess and alluvium, are furnished by the deposits of pleistocene.

The pleistocene or surface clays are easily and cheaply worked. They yield an abundant and excellent supply of materials for the manufacture of the common grades of clay wares which will be equal to all of the local demand of the future, no matter to what proportions the needs may grow. These deposits are widely distributed in the state. While the local demand for such goods as pleistocene materials will successfully produce is enormous, and will constantly increase, yet the clay products for exportation from the county will be made almost exclusively from the coal measure shales.

Fortunately for the city of Des Moines there occur at various points within its borders shale beds of unlimited quantity, the materials of which are well adapted to the manufacture of a large variety of clay products, while close at hand there are seams of coal which furnish an abundance of excellent fuel for the burning of the wares.

Des Moines already occupies an enviable place as a producer of clay goods, but her resources in this direction are as yet for the most part undeveloped. The total value of the clay products of Polk county for 1904 amounted to $648,853. This sum was about equal to the combined output of the three largest clay producing counties in the state, with the exception of Polk. The value of her common brick production was nearly $200,000. The total brick production of Polk county for last year aggregated considerably more than $350,000, and her output of drain tile for the same period amounted to more than $130,000.

The coal measure shales furnish a supply of excellent material for manufacture into all of the above-mentioned clay products.

Of the less common but very important clay goods that the Des Moines shales are well suited to produce are vitrified wares, such as paving brick and sewer pipe. The demand for these goods has increased rapidly in recent years, and their manufacture is becoming a very important industry.

During 1903 the output of paving brick for Iowa aggregated 21,888,000. During the same year Kansas produced 54,061,000, Missouri furnished 31,496,000, and Illinois manufactured 96,568,000. In 1904 the production of pavers in Iowa fell a little below that for the preceding year, but the value of her output for this year amounted to nearly $200,000. Of the paving brick made in our state small quantities are manufactured at Boone and Oskaloosa, but in recent years far the greater portion of the paving brick output of the state has been made in Des Moines.

A very large proportion of the paving brick used in Iowa at present is imported. Thousands of dollars have recently been paid to clay manufacturers in Illinois by cities like Cedar Rapids and Oelwein for the brick laid on their streets. As long as such large quantities of paving brick are annually shipped into the state there will be room for great expansion of this industry in Des Moines, and large opportunities for trade to be won by local producers. The best grades of paving brick that are manufactured in Des Moines have demonstrated their good quality and durability when used in pavements. It seems certain that with the same knowledge of the composition of the various layers of shale used in the different manufacturing plants, and with the same care exercised in the selection and mixing of these materials as is practiced by competing producers, as good a grade of paving brick can be made in Des Moines as is brought into Iowa from neighboring states.

Sewer pipe is another important clay product that can be successfully made at but few points in Iowa, and which up to this time has been manufactured in our state exclusively at Des Moines. The value of the sewer pipe produced in Iowa in 1903 amounted to nearly $95,000. The output for Illinois for the same time totaled $534,858, while that of Missouri aggregated $1,050,794. Of course the presence of cities like Chicago, in Illinois, and St. Louis in Missouri, would make the demand for sewer pipe in those states greater than in Iowa, but until the needs of our state are amply met by Iowa producers, there is a good field for the expansion of this industry in Des Moines.

The coal measure shales at Des Moines furnish clays suitable for the manufacture of some grades of pottery. There are at present seven potteries operating on a small scale in our state, and the total value of the pottery production in Iowa for last year amounted to more than $66,000. Only the coarser earthenware and stoneware goods are at present manufactured. It seems probable that if some of the finer grades of kaolin were imported from Missouri or other points, and mixed in small quantities with the local clays, a superior grade of pottery might be produced, and the manufacture of pottery might become an important industry at Des Moines.

The coal production of Iowa has the past year aggregated more than six and one-half million tons. The coal bearing strata of the state occupy a narrow area bordering either side of the Des Moines river from the northern part of Webster county down to the southeast corner of the state.

The counties that border upon the channel of the Des Moines river, embracing Webster, Boone, Polk, Warren, Marion, Mahaska, Monroe, Wapello and Van Buren, produce nearly five-sixths of all the coal mined in the state. The other counties that furnish quantities of commercial impor-

tance are Jasper, Lucas and Appanoose; and all of these corner but a few miles from the channel of the river.

Polk county is situated but a short distance north of the geographical center of Iowa's coal basin, and the greater portion of the coal worked in the county centers around Des Moines.

In 1904 there was mined in the county 1,131,668 tons of coal. This was an increase of more than nine and one-half per cent over the output of the preceding year. It represents more than one-sixth of all of the coal mined in Iowa.

It is the occurrence within its borders of such unlimited quantities of coal measure shale in the presence of such a fortunate supply of excellent coal that makes it possible for Des Moines to become a great center for the manufacture of clay wares.

Few cities in the middle west possess such favorable shipping advantages as Des Moines. Many different railroad lines radiate from the city and connect with roads extending to every corner of the state. These distributing facilities place the wares produced in Des Moines within easy reach of all of the more important cities of Iowa.

In conclusion it may be said that there is room for large expansion in the clay manufacturing industry in Des Moines. With a practically inexhaustible supply of raw materials adapted to the making of a variety of clay goods; with excellent coal for the burning of these wares occurring close at hand; and with such transportation facilities, there seems no reason why the city of Des Moines should not become famous for its clay products.

PROSPERITY OF THE BUILDING INDUSTRY IN CHICAGO.

The prosperity of the building industry in Chicago at the present time is unprecedented in any year since the world's fair year in 1893. This is resulting in extraordinary profits to local industries like Illinois Brick and Western Stone, whose sales are now larger in volume than ever before.

The Illinois Brick Company in July broke all previous monthly records for sale of brick, the total for the month amounting to 42,000,000. Since July 1 this company has added to its surplus above dividend requirements, $120,000. The declaration of the next quarterly dividend of 1½ per cent is expected about the twentieth of this month.

An official of the company says that actual net earnings of the company are now running nearly double the amount of the present dividend requirements. Illinois Brick stock is now selling close to 60. Before the Knight-Donnelley failure this stock was in the 70's, but as the failed firm had large holdings of Brick, which had to be sold at once, a severe break ensued in the price.

Western Stone, which is also participating in the building industry prosperity, will in a few days pay the first dividend it has paid in many years.

The building permits in 1905, which show great gains over last year, represent work which will doubtless keep the building industries to the top notch of active business all through next year at least.

BURGESS SLATED FOR ASSISTANT APPRAISER AT NEW YORK.

That Leslie M. Shaw, secretary of the treasury, is determined to put an end to undervaluations of pottery goods imported at New York was recently demonstrated when it was learned that C. N. Burgess, a brother of William Burgess, a pottery manufacturer of Trenton, N. J., will be appointed assistant appraiser of the second division of Appraiser.

The appointment derives its significance from the fact that William Burgess, as chairman of the executive committee of the National Potters' Association, has conducted during the past three years a most effective campaign against undervaluers of imported chinaware. The present occupant of the office of assistant appraiser of the second or "pottery" division is W. F. Comley, recently appointed to the position on the request of Senator Dryden of New Jersey, who represented to President Roosevelt that New Jersey was entitled to representation in the local appraiser's office. Unless the present plans change, Secretary Shaw will advise the President that Burgess should be named for the head of the second division, and Comley's transfer made to the sixth, or "wool" division.

The news is far from welcome to the importing interests of New York. A Vice-President of the importing firm, beyond making the comment that he "was not surprised at anything in the customs service," declined to express an opinion. Close observers of the situation believe that the importers will not stand idly by and see a representative of the American pottery interests appointed to pass upon the invoices of foreign goods entering this port. Borgfeldt & Co. are credited with annually paying the government $1,000,000 in customs duties, while other local importers paying heavy duties are to be reckoned with.

William Burgess, the brother of the new appointee, went abroad last year and accumulated evidence against the importing interests, on the strength of which, the board of appraisers imposed advances of 10 per cent on many importations of Borgfeldt & Co. The goods affected by the increased valuations came from the Maestricht district of Holland. It is said Mr. Burgess gained his information by representing himself as a merchant from Manila. Wilbur F. Wakeman, secretary-treasurer of the American Protective Tariff League which took active part in correcting undervaluations in imported chinaware, said he had nothing to say further than the statement that he had the utmost confidence in any action Secretary Shaw might take for efficient administration of the revenue laws of the government.

THE OVERLAND LIMITED.

To California in less than three days.

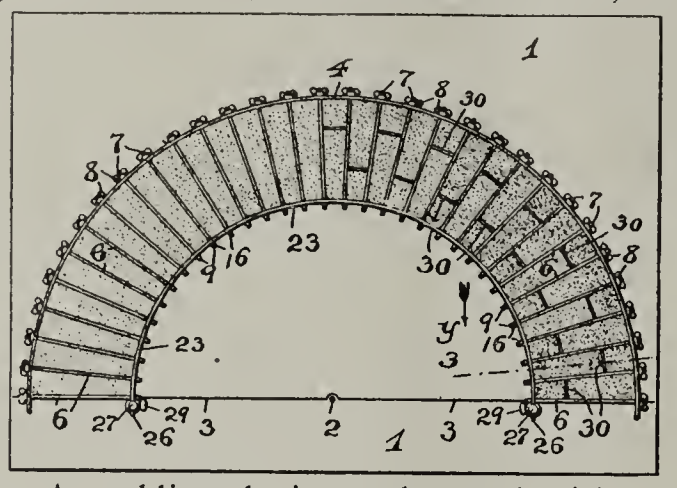
The Overland Limited, leaves Union Passenger Station, Chicago, 6:05 p. m., every day. Route—Chicago, Milwaukee & St. Paul Railway, Union Pacific and Southern Pacific. Less than three days Chicago to San Francisco via Omaha. Descriptive folder free.

F. A. MILLER,
General Passenger Agent,
Chicago.

NEW INVENTIONS THAT ARE OF INTEREST TO THE CLAY MANUFACTURER.

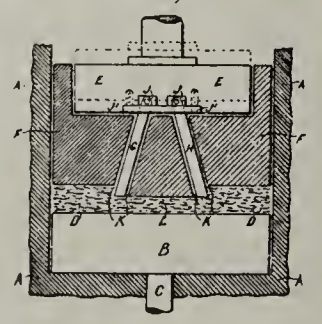
These new inventions are those that are especially of interest to any one engaged in the line of building materials and their manufacture, or machinery to make them.

796,641. Molding Device. James P. Hall, Jersey City, N. J. Filed Oct. 28, 1904. Serial No. 230,293.



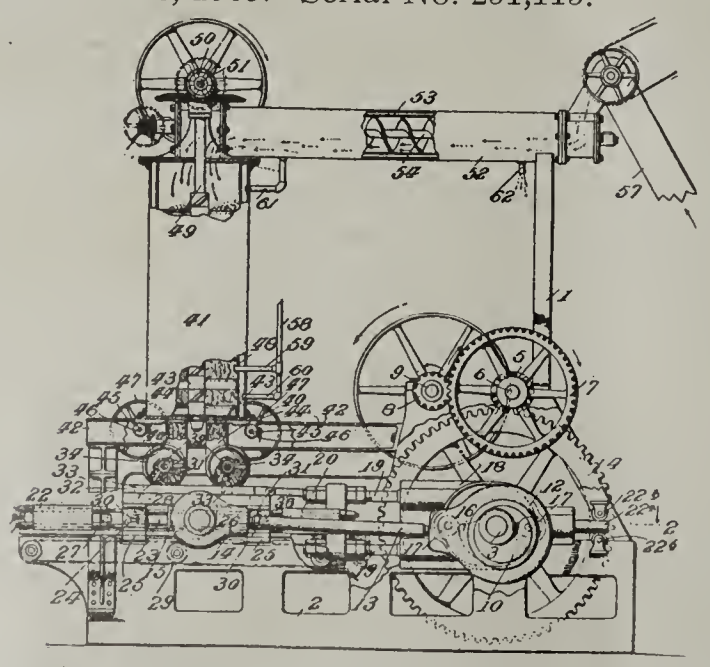
Claim.—A molding device to be used with a molding board, table or bed, comprising a back or retaining-plate, partition-plates connected with said retaining-plate, a perforated lug extending from each partition-plate, and a fastening-pin in each lug for securing said partition-plates in fixed positions upon the molding board, table or bed, substantially as and for the purposes set forth.

796,918. Manufacture of Tiles, Bricks, and the Like. John H. Marlow, Edinburgh, Scotland. Filed Sept. 27, 1904. Serial No. 226,212.



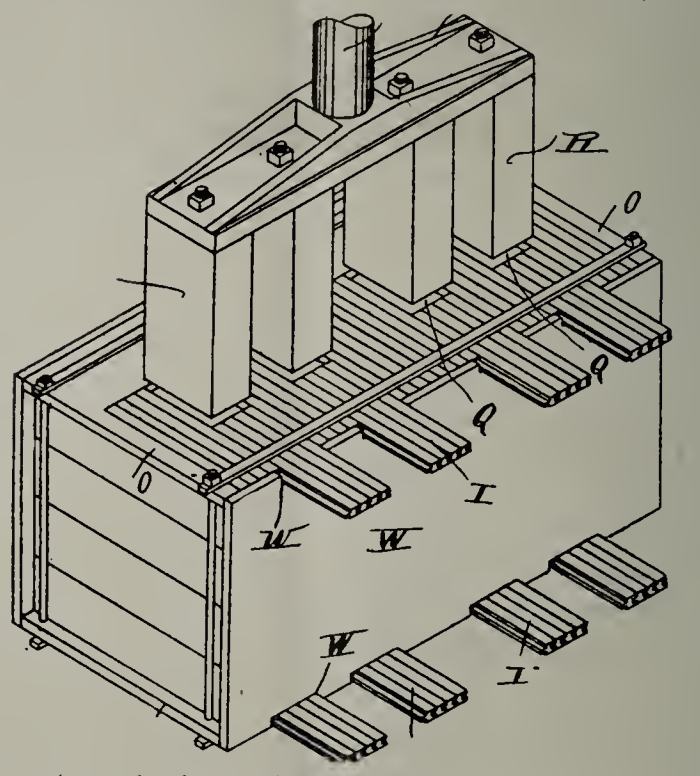
Claim.—In an apparatus for the manufacture of tiles and the like, a die having its upper part consisting of two plates loosely connected together, bearings J on the upper plate, plungers having their upper ends journaled in said bearings, and plates J' for holding the journals of said plungers in said bearings, the lower plate having slots therein which the plungers work.

796,921. Molding-Machine. Edgar D. Misner, St. Louis, Mo., assignor to William C. Renfrow, Joplin, Mo. Filed Mar. 20, 1905. Serial No. 251,113.



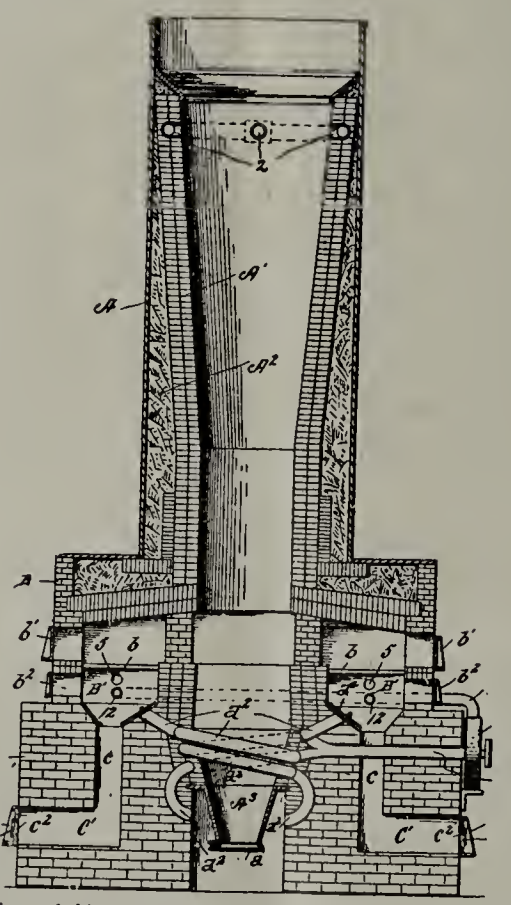
Claim. A molding-machine comprising two die-housings, a double series of dies located between the two die-housings, means for reciprocating said dies, two end sets of dies movable each toward and away from one die-housing, means for simultaneously operating all of the dies so that one set of end dies will always be cooperating with the first-mentioned dies, and means for supplying pulverulent material to said die-housings.

797,449. Box for Use in Making Concrete or Cement Building-Blocks. John W. Minor, Memphis, Tenn., assignor of one-half to Fred L. Schwanze, Memphis, Tenn. Filed Apr. 22, 1905. Serial No. 256,959.



Claim.—A mold for building-blocks made up of a series of interchangeable tongue-and-grooved sides and ends, means of holding the same together, a tamping member for compressing the material in the mold, and a guide for said tamping member, as set forth.

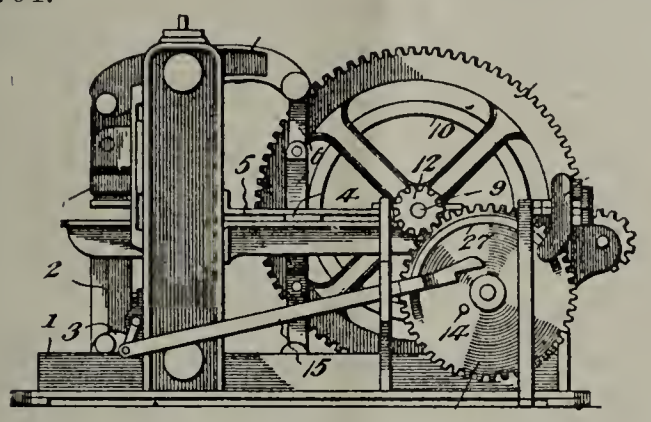
797,537. Limekiln. Saul W. Shoop, Front Royal, Va. Filed Aug. 15, 1904. Serial No. 220,847. Substituted for abandoned application filed Apr. 27, 1904, Serial No. 205,085.



Claim—A limekiln provided with a second ash-pit at a considerable distance below the combustion-chamber and first ash-receptacle, and a flue running from said second ash-pit to said receptacle, air-inlets being provided through said ash-pit, substantially as set forth.

In a limekiln, the combination of the kiln structure and a draft apparatus comprising coiled pipes or flues surrounding the lower end of the limekiln-barrel and leading from the chamber adjacent to said lower end into the furnaces, the discharge end of said flues being provided with valves whereby they may be closed, and the forced-draft apparatus connected with said flues and adapted to draw the air therefrom and discharge the same into said furnaces under pressure, substantially as set forth.

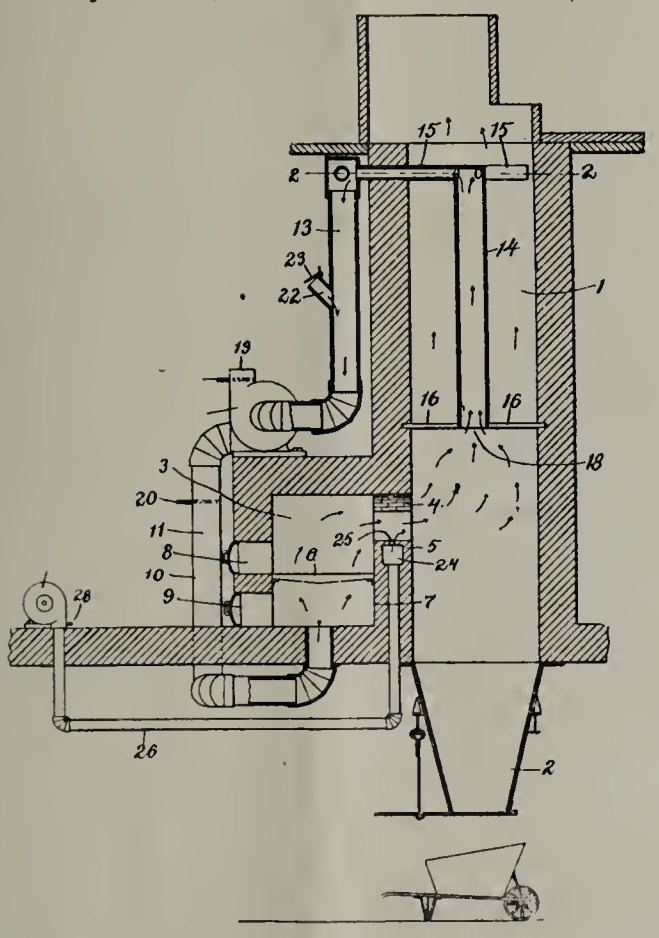
797,658. Brick-Making Machine. Henry C. Barker, Kansas City, Mo. Filed Nov. 29, 1904. Serial No. 234,764.



Claim.—In a brick-making machine the combination with a die-operating screw-shaft, of a sliding shaft, means for operating and sliding said shaft, and reversing-gearing operated by the sliding movements of said shaft to reversely rotate the screw-shaft.

In a brick-making machine, a die-operating screw-shaft, a gear connected thereto, a sliding shaft provided with gears adapted to alternately engage the gear connected to the screw-shaft, means for rotating the sliding shaft, a cam-wheel, and means operated by said cam-wheel for periodically sliding the sliding shaft in reverse directions.

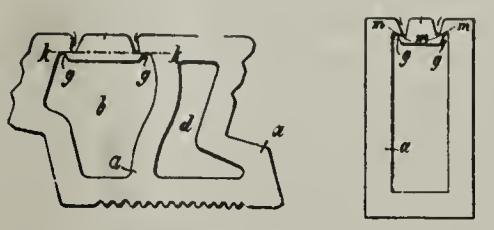
798,023. Limekiln. Byron E. Eldred, Brookline, Mass., assignor to Eldred Process Company, New York, N. Y. a Corporation of New York. Filed Feb. 18, 1901. Renewed June 28, 1905. Serial No. 267,448.



Claim.—In a kiln apparatus, the combination of a calcining-chamber provided with a burner for lateral firing, a conduit structure having connections for deriving a supply of air and a neutral diluent mixed therewith, entering the burner at a point anterior to the point of fuel support or supply, whereby combustion is retarded, means for impelling the mixture under artificial acceleration through the conduit structure and through the burning fuel, and means for varying the proportion of ingredients in the mixture.

797,950. Hollow Building-Brick. Otto Forster, Grunewald, near Berlin, Germany. Filed May 26, 1904. Serial No. 209,917.

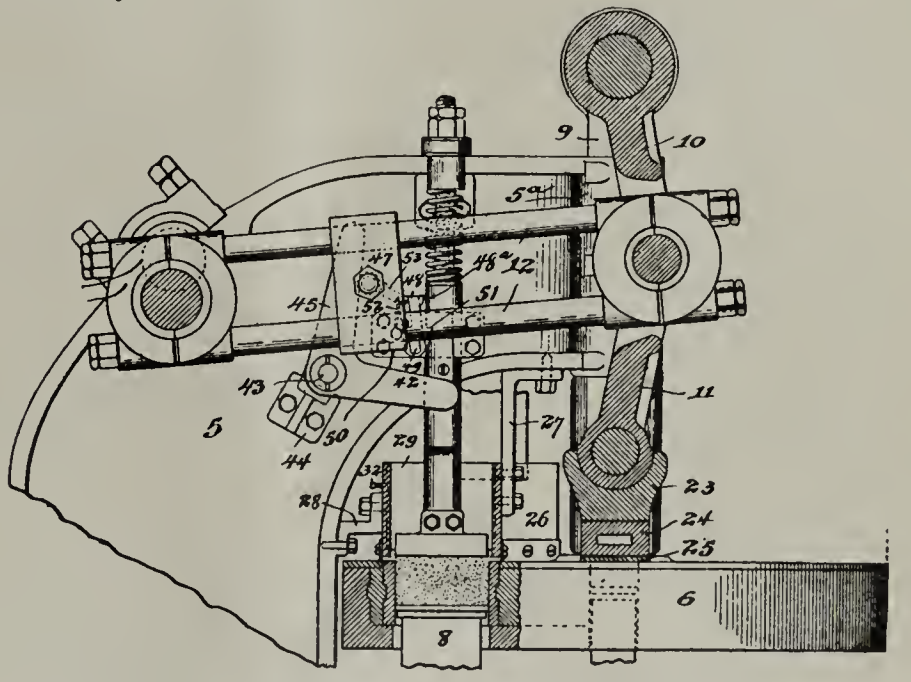
Claim.—A hollow brick having inner and outer grooves to form a breakable stay-piece, said grooves arranged to extend into the stay-piece to the same plane or overlap each other at distances apart, the inner grooves arranged between the outer grooves in the body of the brick.



A hollow brick or stone having inner and outer grooves in the body thereof forming a break-away stay-piece and for facilitating the shearing of the latter, said grooves extending into the body to the same plane, and the outer grooves arranged at a distance from the inner grooves.

798,329. Mold-Filling and Tamping Device for Brick and Similar Presses. Harry J. Flood, Chicago, Ill. Filed Aug. 8, 1904. Serial No. 219,907.

Claim.—The combination with a stationary hopper and a mold-box movable to a charging position therebeneath, of a spring-actuated tamp reciprocable in said hopper, means for elevating said tamp, and means whereby the tamp-actuating spring is subsequently made effective to drive the tamp upon the material in said mold-box, substantially as described.



The combination with a rotable mold-table having a series of radially-disposed mold-boxes, of a superposed open-bottomed stationary hopper of a length sufficient to cover two adjacent mold-boxes, a transverse vertically-adjustable partition dividing said hopper between said mold-boxes into a charging-compartment and a tamping-compartment, the lower edge of said partition constituting an evener or leveler of the material in each mold-box as it is moved from beneath the charging-compartment to a position beneath the tamping-compartment, a vertically-reciprocable tamp in said tamping-compartment, a spring supplying the impacting energy of said tamp, means for elevating said tamp against the action of said spring, a detent for holding said tamp elevated during the movement of each charged mold-box to a position therebeneath, and a detent-releasing mechanism, substantially as described.

CLAY RECORD.

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GEORGE H. HARTWELL, Editor.

SUBSCRIPTIONS.

Send One Dollar bill or stamps for United States, Canada or Mexico and one dollar fifty cents for all other foreign countries.

Papers are not stopped at the end of subscriptions unless the subscribers order them so and pay up the arrearages.

ENTERED AT THE CHICAGO POST OFFICE AS SECOND-CLASS MATTER.

Vol. XXVII. SEPTEMBER 30, 1905. No. 6

"I like to read American advertisements. They are in themselves literature, and I can gauge the prosperity of the country by their very appearance."—William E. Gladstone.

When times are dull and people are not advertising is the very time that advertising should be the heaviest. Ninety-nine out of every hundred merchants advertise most when there is least need of it, instead of looking upon advertising as the panacea for their business ills.—John Wanamaker.

He who says nothing is never misquoted.

A smile that can be bought for a dime is soon swallowed.

You will never know how small some great men are unless you have occasion to go to them for a favor.

There is no limit to the business that can be created by good advertising in the right Journals and at the right time.

Obligations to others make us creatures of other's caprices. It is as if there were a chattel mortage on our souls and freedom, with constant threats of foreclosure dinging in the ears of our fearsome progress.

The Clay Record is the only semi-monthly Clay Journal in America. Twenty-four copies for one dollar, cheap enough! Advertise in it. You can get more for the money than elsewhere. Try it and be convinced.

To do the greatest good we must have the greatest power. Power cannot be considered as a single force; it is a thing of numberless causes acting in harmony to produce a given effect. He who wishes to do good must gather to himself the instruments wherewith to accomplish.

The substitution of one material newly regarded as better for a given purpose than another that has been long used, is sure to create more or less feeling and develop antagonisms, and these at times bitter.

We are told the increasing use of cement for buildings is developing in many directions opposition and the expression of opinion of what is alleged will unavoidably result is so painful that it would be simply distressing and could not be endured if history and experience did not come to our relief. When the substitution of machine work for that performed by skilled hands was broached it was desperately fought, even lives were sacrificed; and the man or men urging it were esteemed the foes of the workingmen, but later it being shown what were the benefits steadily resulting from the change, then in any place that machinery could be substituted it was done. And in other directions the same thing in principle has been worked out with success, *hence, it is too late now to use the old arguments.*

If a thing is better for a given purpose, and may be handled by machinery, the material and the method of applying it will be adopted, all opposition to the contrary notwithstanding. However, if the material happens to prove unsatisfactory, nothing can force its use, but on the other hand, if it prove satisfactory the use of it will increase despite anything and everything that may be done to prevent. Concrete, brick and stone will continue to go into buildings and those are only borrowing trouble from a possible period of an extremely remote future if they worry over the possibility of concrete material putting brick and stone out of business.

There was a certain anxiety some weeks back as to the outcome of the crops, for so much depends on this factor, but we are happy to say nature favored us and the crops will be not only good but larger than ever, which means that the country is richer today; the people as a whole better off and in position to satisfy wants as never before, and taken together means a larger volume of business the country over this coming season, and following one of the biggest trade years the country has experienced.

There have been croakers whose utterances have been filtered through the press for two years past, at least predicting a falling off in the volume of business, reduction in prices and shrinking in profits, etc., some going so far as to predict hard times, but the Clay Record did not and could not see it that way, as our readers will easily recall, we insisted that all the conditions pointed to an expanded trade both at home and abroad, and reports indicate our predictions have been fully verified.

It is a great thing for a country and its people to have

a series of prosperous seasons and that this country has been favored admits of no question, and, her appreciation of it should be unmistakable in a higher life, in the working out of schemes for the amelioration of the conditions of the masses, and contributing to the upbuilding of humanity.

If there lie in the future events which shall change the present outlook they are not visible, and we may hope for and expect to see a steadily increasing volume of business the remainder of this year to be continued through the coming year. This is the Clay Record's horoscope of the coming season's trade.

FIRES, ACCIDENTS, DAMAGES AND LOSSES.

The roof of the brick works of the Forest Clay Works, at Forest, Ohio, was burned off during a recent burn of brick.

Edward Robinson got caught in a machine at the Banner Clay Works, Edwardsville, Ill., and had one of his fingers cut off.

A gang of safe blowers cracked the safe of the Star Brick Works, Sciotoville, Ohio. Only a small amount of money was taken.

The big water tank of the new Albert Lea (Minn.) Brick & Tile Co.'s plant fell to the ground and did considerable injury besides delaying the plant.

A piece of falling shale fell from the top of the pit at the South brick plant, Chanute, Kansas, and struck John Conrad, a pit laborer, seriously injuring him.

Proceedings to have the Carolina Fire Brick Company, Killian, Richland County, S. C., adjudged bankrupt have been begun in the United States district court.

Thos. Carrigg and Patrick Feeney have filed a suit against the Walker's Mills (Pa.) Stone & Brick Co. to recover damage on the alleged use of an improvement on a churn drill.

The sale of the $12,000 stock of the Frost Pressed Brick Co. owned by Mr. Frost has been postponed that he may make a settlement of his affairs and of organizing a company to take the balance of the stock of the company.

Joseph A. West, a brick manufacturer of Beaver, Pa., and Luke F. Darrell of Kittanning, filed a voluntary petition in bankruptcy, both as individuals and as partners in the West & McLean Brick Company, of Alleghany City, Pa. Liabilities $64,682, and assets $15,507. Mr. West states his individual liabilities are $323,616 and assets $62,125. Mr. Darrell's liabilities are $70,498, assets $6,084.

OHIO BRICK MEN LOOK FOR BIG SEASON NEXT YEAR.

The season for brickmaking throughout this section has ended and all the plants, with but a few exceptions, are closed down until next spring. In Toledo, there are located a dozen plants. All these, with two exceptions, are closed. Two East Side plants operate throughout the entire winter, being equipped with drying apparatus. All the other plants have the sun-drying process and can only be operated through the summer season, or rather, from the time the frost is out of the ground in the spring until the freezing period in the fall.

The total production of the Toledo brick plants during an ordinary season is between 50,000,000 and 60,000,000 brick. This is an enormous production for one season, and gives one an idea of the extent of the business. Some of the companies do a big business outside of Toledo, but by far the major portion of the production is used in the construction of buildings in the city.

The past season was excellent for the manufacture of brick; in fact, there has not been such a favorable season in years. On the other hand, building activity has not been up to the standard of former years. Brick men say there will be big business next season. Architects also say the prospects for a rushing business next season are exceptionally good.

BRICK MANUFACTURERS JUBILANT.

The fact that the New York brick market is short by many millions proves a source of sincere gratification to the brickmakers of this vicinity. The Cary Brick Company at Cohoes and Newton Hook, The New England and Champlain Brick Companies at Mechanicsville and The Troy Brick Company at Upper Troy have their yards well stocked in anticipation of the spring rush. The present price of brick is $7.50, and before May it is thought the price will be $10 a thousand. The causes of such a phenomenal rise are the comparative scarcity of brick and the extraordinary demand. New York city alone will require more than the number now on hand, while Jersey City, Bayonne, Hoboken and Newark are using more than their ordinary quota. Brick men figure that with weather conditions favoring, labor being plentiful and strikes out of the way, it will require several months to catch up with the demand. Brickmaking along the lower Hudson is conditional, since it depends wholly upon the weather, which at its best is bound to be more or less rainy in the early season. On this account the manufacturers of this vicinity, who by means of their steam dryers can make brick independently of the state of the weather, are jubilant since they realize that by means of their superior advantages they can profit by the present demand and high prices.

SAND BRICK LOCATIONS.

The newly established Industrial Department of The North-Western Line is calling attention to the many natural advantages that exist along its road for the manufacture of brick and tile. They find in their investigation that the new process for the manufacture of brick by the use of a suitable quality of sand has brought to notice several fine deposits of this mineral at widely separated points on its system. This presents addiional opportunities to those concerned in the manufacture of brick and opens a wide field from which a choice of location can be made and good surrounding markets obtained.

THE UNITED BRICK COMPANY.

The United Brick Company, composed of some of the most influential financial men of Conneaut, O., and Pittsburg, Pa., has absorbed the plant formerly known as the Harper-Norton Shale Brick Company and will, as soon as possible, open the plant and begin the manufacture of brick. The stockholders held a meeeting recently and elected the following directors: Messrs. G. M. Whitney, A. O. Hoskins, E. A. Miller, F. B. Dunn, J. H. House and F. W. Upson, of Conneaut, and N. C. Ralph, of Pittsburg, Pa. Later the directors held a meeting and elected the following officers: G. M. Whitney, president; J. H. House, vice-president; A. O. Hoskins, treasurer, and N. C. Ralph, secretary.

The plant has been idle fifteen months because of lack of working capital. This will no longer handicap the industry, as there is now plenty of money in the new organization. Mr. Ralph is a prominent brick man of Pittsburg and represents Pittsburg capital in large amounts. The other men are all well known in Conneaut. The plant will be immediately opened with a force of 45 or 50 men and work every day. To Mr. Whitney is due the thanks of the people of Conneaut more than any other one man in the company. It is through his untiring efforts that the new company has been formed. Already the company has sufficient number of orders in sight to keep them running for some time. Mr. Dunn will be the superintendent of the plant. The new company is capitalized at $130,000.

WORK OF MAJOR WILLIAMS IN FRANCE DISPLEASES POTTERY MEN.

Major William H. Williams, special European agent of the treasury department, located at Paris, has been recalled to the United States, but it is not expected that he will return to this country before fall. Major Williams has been in his present position about twelve years, and it is understood that some of his recent work has been unsatisfactory to the pottery interests of this country. Major Williams, it is stated, will be given a responsible position in the United States.

INVESTIGATE THE SERVICE OF THE NICKEL PLATE.

When planning a business or pleasure trip from Chicago to Buffalo, New York, Boston or any Eastern point, you should investigate the satisfactory service afforded by any of the three Express Trains operated by the Nickel Plate Road. Colored porters are in charge of coaches, whose duties are to look after the comfort of passengers while enroute. Special attention shown ladies and children, as well as elderly people, traveling alone. No excess fare charged on any train on the Nickel Plate Road. American Club Meals, from 35 cents to $1.00, served in Nickel Plate dining cars. One trial will result to your satisfaction. All trains leave from La Salle Street Station,—only depot in Chicago on the Elevated Railroad Loop. Call on or address John Y. Calahan, General Agent, 113 Adams St., Room 298, Chicago.

WASHINGTON BRICK MANUFACTURERS STILL WANT THE LONG BRIDGE.

At the earnest request of the brick manufacturers of Alexandria county, Virginia, the War Department has consented to defer the demolition of the old Long bridge across the Potomac until next summer. This determination is the result of correspondence between the merchants in question and the engineer officers of the army in connection with the expected early completion of the Potomac Highway bridge.

Several weeks ago Gen. Mackenzie, chief of engineers, received an appeal on behalf of the brick manufacturers of Alexandria county for the retention of the old Long bridge until the approaches on the north and south sides of the Potomac Highway bridge have been constructed and thoroughly tested as to their ability to bear the heavy traffic which must pass over them when the Long bridge is no more. It was represented by the manufacturers that if the new approaches should give out, with the Long bridge closed, their product would be excluded from the market in the District of Columbia and the district would be deprived of at least 50 per cent of its present brick supply.

It is explained that a macadam pavement is being laid on the approaches to the new Highway bridge, and that the experience of the brick manufacturers with a similar pavement on the approaches to the old Long bridge demonstrated its inability to stand the traffic of the heavy brick wagons and necessitated the substitution of a granite block pavement for that traffic.

The communication was referred to Lieut. Col. Hoxie, the engineer officer in charge of the improvement of the Potomac river, for consideration and report. "I think," reported Col. Hoxie a few days ago, "it more than probable that the macadam pavement upon the approaches to the new Highway bridge would be unsatisfactory for the heavy traffic to which it would be subjected before the embankments have become thoroughly consolidated. The conditions, however, are somewhat more favorable than upon the approaches to the Long bridge, where the roadway is not properly drained. For that reason I favor the retention of the Long bridge, if practicable, until next summer, when a granite pavement can be laid over the macadam.

"In retaining the Long bridge through another winter there is, of course, another year added to its life as an obstruction and as a cause of ice-gorge, but I do not think that sufficient reason for discontinuing its use at this juncture.

The brick manufacturers have been notified that the War Department will suspend action in the matter of the removal of the Long bridge for the present, in accordance with the recommendation of Col. Hoxie.

SHIP IOWA BRICK FOR PANAMA CANAL.

On board a steamer Sept. 26 from New York for Colon was a consignment of 4,000 tons of vitrified brick for use in repaving the city of Panama. This is the first shipment made on a contract recently awarded by the Panama canal commissioners to a Dubuque, Iowa, firm for 3,000,000 brick of the vitrified type capable of withstanding the damp climate of the isthmus. Altogether the shipments will amount to 10,000 tons.

FIRED THROUGH WINDOW AT WIFE OF BRICK MANUFACTURER.

Mrs. James C. Dobbs, the wife of a prominent brick manufacturer at Collingswood, N. J., is in a serious condition at her home as the result of an attempt made to murder her. She is confined to her bed suffering from nervous prostration.

The Dobbs family is among the most prominent in Collingswood, where they have resided for the past thirty years. Mr. Dobbs conducts a prosperous brick manufacturing plant on Cuthbert's road. Last Saturday evening, about 7:30 o'clock, Mrs. Dobbs was sitting at the supper table, when she was startled to hear a pistol shot and the crack of glass as a bullet passed through the dining room window. It struck the chair in which she was sitting, and, glancing, hit the sideboard and then rebounded, striking Mrs. Dobbs on the shoulder. Only a slight flesh wound was inflicted, as the bullet had spent its force.

As she realized the narrow escape she had had, Mrs. Dobbs was prostrated. Dr. Duncan W. Blake, the family physician, has been in attendance ever since, and, while Mrs. Dobbs is still in a serious condition, she was somewhat improved last night.

Mayor Collings was notified of the attempt at murder. He communicated with the county authorities and Detectives Smith and Cherry were put on the case. From their investigations they believe the shot was fired from a side porch of the Dobbs residence, at 20 Washington avenue. Suspicion is directed toward a laborer who formerly worked for Mr. Dobbs, and who was discharged some weeks ago. Revenge is supposed to have prompted him to attempt the crime. Mr. Dobbs was not at home at the time of the shooting.

The suspect is said to have been seen loitering about the Dobbs residence just prior to the firing of the bullet. The detectives expect to make an arrest in a day or two.

LARGE BRICK AND TILE WORKS SOLD FOR TAXES.

The Perry (Iowa) Brick & Tile Company's plant, just west of the city, was sold for $50 to H. M. Shively, the property itself being worth $16,000. The sale was the result of a notice for non-payment of personal taxes which was made April 1, and which was forgotten by the members of the board of directors of the company. The taxes amounted to $50, but since the plant has not been in operation for several years, the service of the notice was passed up.

The personal tax collector for the city posted notices of the sale of the plant in three obscure places, so the directors claim, and say that they knew nothing about the sale until the fact that the sale had been made was told them.

The board of directors, consisting of A. C. Zartman, president; W. H. McCammon, secretary; and H. C. Modlin, treasurer, together with Fred Knell and W. D. Brown, propose to fight the case. It is claimed that the Iowa statute makes a sale of personal property unredeemable, and that there is no redress. The directors allege that there was some collusion in the sale. The plant was built four years ago and cost them about $20,000.

POUGHKEEPSIE SECURES PLANT THAT WILL EMPLOY 600 HANDS.

The Poughkeepsie (N. Y.) Board of Trade has succeeded in securing for that city an industry that will employ upwards of 600 persons, for the greater part men.

The new industry is the German Clay & Stoneware Works, Limited, and the new concern has purchased the Beck property, on the Hyde Park road, comprising sixty acres. But 12 acres will be used at the outset. The property is located north of the city line.

The headquarters of the company are in Berlin, Germany. In that country they have four large plants. They are located at Krauschwitz, Charlottenburg, Bettenhausen and Munsterberg. The plants in these cities were formerly owned by separate firms. The company will manufacture high-grade acid-proof stoneware, and the clay to be used in its plant will be imported from Germany. Albert March, of Charlottenburg, Germany, will be the resident manager.

The products of this plant will be used for manufacturing purposes where acids are used. The following articles will be put out: Worm pipes, pipe coolers, evaporating pans, jugs, cellarius jars, decanting pots, bleaching pots, nitration pots, vacium kettles, percolators, shorine stills, towers, distributors, injectors, exhaustors, cocks, valves, syphons, pumps, blow cases, pipes, funnels, sieves, filters, lanterns, fan stirrers, distilling domes, carboys, transporting vessels, square vats, tanks, electrochem apparatus and automatic acid lifts.

On one section of the water front there is a cove three or four hundred feet wide, and this will be filled up and a dock will extend across the mouth of the cove. The water is deep there and all that will be necessary to do will be to fill up the cove and build the dock the entire length. This will be done so as to permit ocean going vessels coming direct to the plant.

DEMAND FOR MOULDED BRICK FAR EXCEEDS THE SUPPLY.

Practically all building operations at South San Francisco, Cal., in which moulded brick forms an important part are at a standstill. This has been caused by the tremendous demand for brick from San Francisco. As a result the pottery and brick yards in the vicinity of the metropolis have exhausted their supplies. They have many advance orders on hand. This condition of affairs as a matter of course is desirable and local builders are quite content to submit to some inconvenience.

THE SEABOARD MAGAZINE.

The above is the name of a monthly publication issued by the Industrial Department of the Seaboard Air Line Railway, J. W. White, Genl. Industrial Agent, Portsmouth, Va. It treats on the industries along this line and offers many inducements for all kinds of industries from that of the smallest up to the largest of manufacturies. Much good knowledge can be gained by reading the Seaboard Magazine and Mr. White would be glad to send you a sample copy if you are interested in the prosperity or growth of the South.

SAND OR LIME-BRICK OR BLOCK NEWS.

Lewis Bros., Lebanon, O., are making cement blocks.

Keim & Co., Tecumseh, Neb., will go into the manufacture of cement building brick and blocks.

George Gould & Son, Davenport, Ia., have devised a machine for the manufacture of cement brick.

C. D. Jones, Beaufort, N. C., wants information about sand-lime brick and machinery for making same.

E. A. Poe, a brick manufacturer at Fayetteville, N. C., will install machinery for making cement blocks.

The Coxey Egyptian Pyramid Stone Block Co., Mt. Vernon, Ohio, has been established by General Jacob S. Coxey.

The Detroit (Mich.) Cement, Stone & Tile Co. has voted to increase the capital stock of the company from $25,000 to $100,000.

Sand-lime brick machinery manufacturers are requested to correspond with E. P. Stiles, Huntsville, Texas, with a view of placing machinery.

The Manistee (Mich.) Brick Co., a sand-lime brick company, made an exhibit of their brick at the West Michigan fair held at Grand Rapids and secured the first prize.

Nels Erickson, a manager of a cement block machine company, is setting up at the North Dakota Tile Works, Fargo, N. Dak., a cement block machine that will turn out 750 blocks per day.

The Texas Sand-Lime Brick Co., Guthrie, Okla., has been incorporated with $200,000 capital stock. The directors are E. L. Long and J. L. Durand, of Dallas, Texas, and J. C. Durand of Oklahoma City, Okla.

The capacity of the Owensboro (Ky.) Sand Lime Brick Co.'s plant is being increased. The orders had been coming in so rapidly that it was decided to increase the size of the plant at once. The Schwarz system is used here.

An effort is being made to organize a sand-lime brick company at Greenfield, Ind., and use the sand found on the farm of E. T. Dobbins, four miles north of the city. Samples of brick have been made and tested by Purdue that are pronounced very fine.

The New Jersey Artificial Stone Co., Jersey City, N. J., has been incorporated with $50,000 capital stock. Incorporators, Henry McClain, Charles F. Zeighler and Charles E. Hendrickson, jr. The company will take over the business of the New Jersey Artificial Stone Company.

J. W. Farrier and J. A. Moss, who represent the Steger System of making sand-lime brick, are expecting to put in a plant of this kind at Oklahoma City, Okla. A company has been practically organized with $100,000 capital stock. The real estate firm, Pryer, Benn & Wagnon, are interested in the enterprise.

After years of experimenting in the effort to make brick of sand and lime, Carl Dignowity, a German farmer and chemist, residing near Denison, Texas, has been successful and he has perfected a brick made by a secret process which is pronounced by experts the best they have seen. The inventor has plans drawn for a plant to be erected near Denison. The machinery will be made in Germany.

MISCELLANEOUS ITEMS.

The Norse Pottery Co., Rockford, Ill., has increased its capital stock to $5,000.

The Midland (Mich.) Brick & Tile Co. has put in a new drain tile machine.

S. G. Mozley & Co., Marietta, Ga., is in the market for brick making machinery.

J. M. Beatty, Edenburg, Pa., is turning out a fine quality of brick at his new plant.

H. E. Powell, Richmond, Ind., the brick contractor, is manufacturing brick at 11th and J streets.

Price-Hemby Co., R. F. D. No. 5, Monroe, N. C., wants information and prices on brick machinery.

A brick yard on the farm of Owen Oberly, at Stewartsville, N. J., is a possibility in the near future.

Machinery has been received at Harrisburg, Ark., for the Rooks-Pfeiffer Pressed Brick & Tiling Co.

Gamble & Surle, East Liverpool, Ohio, has just commenced the manufacture of a new buff building brick.

The Edwards Vitrified Brick & Sewer Pipe Co., Albion, Ill., has been incorporated with $50,000 capital stock.

O. W. Duffield, Carson City, Mich., writes that he is in the market for a second hand horse power brick machine.

E. D. Buckham, Esterville, Iowa, is having some clays tested for the making of brick and tile with a view of going into the business.

On page 38 of this issue of the Clay Record are many special bargains for machinery, plants, etc. You might want just what is advertised.

F. R. Caster has been installed as the superintendent of the Garfield Brick Co., Garfield, Ohio. Mr. Caster was formerly at North Baltimore.

The National Brick Co., Chicago, has bonded its plants to the Metropolitan Trust & Savings Bank for $200,000 for 10 years at 5½ per cent.

M. P. Post, of St. Louis, Mo., is looking over the ground at Texarkanna, Texas, with a view of locating a large sewer pipe and tile works there.

The Superior Brick, Tile & Pottery Co., Snohomish, Wash., has been incorporated with $150,000 capital stock by M. E. & M. B. Stockton and W. A. Stevens.

Manager J. F. Jewett, of the Diamond Fire Brick Co., Canon City, Colo., announces that the company will have a number of improvements made to their plant.

The Maryland Terra Cotta Co., Baltimore, Md., has been incorporated with $60,000 capital stock. The incorporators are H. G. Boyd, Alfred Taylor, Charles H. Slagle, John J. Kelley and Wilbur F. Thyson.

The Orlean (N. Y.) Pressed Brick Co. has been incorporated with $80,000 capital stock by Walter M. Hodgers and Charles B. Foster of Bradford Pa., and William V. Smith of Orlean. The company will buy the McMurry Brick Works.

P. J. Savage has bought the clay works at Socorro, N. Mex., and offers the free rental to it for one year to the Commercial Club of that city if they will operate it.

The Roanoke (Va.) Clay Mfg. Co. has been incorporated with $50,000 capital stock. S. W. Jamison is president, W. S. Battle, jr., vice president, and E. J. DeWine, manager.

The Hastings (Okla.) Brick & Tile Co. has been incorporated with $10,000 capital stock by H. W. Floyd, Fred Plagam, Fred Cassel, J. A. Smith and Roy Magorian.

The Capital City Cement Co., Pierre, S. Dak., has been incorporated with $1,000,000 capital stock. Incorporators are F. M. Wimmer, Chester W. Tuttle and Wm. J. Lee.

The Clatsop (Oregon) Clay & Ochre Co., principal office at Portland, Ore., has been incorporated with $50,000 capital stock by W. L. Dudley, I. A. Yerex, and Wm. B. Streeter.

The Novelty Brick & Coal Co., Newcomerstown, O., has been incorporated with $10,000 capital stock by R. F. Denison, C. C. Owens, A. J. Sperry, F. S. Whitcomb, and C. C. Dewstoe.

Two brick plants have started work in Tulsa, I. T., within the last week, one with a daily capacity of 20,000 brick and the other 50,000 brick.

The Pendley Brick Mfg. Co., Spring Place, Ga., will soon be organized by Wm. Pendley, W. H. Pendley, Dr. J. B. Huges and T. M. Wright of Spring Place, and L. L. Bishop of Dalton.

The Piscataqua Brick Co., capital stock $25,000, has been incorporated by Daniel L. Smith, 28 State St., Boston, Mass., as president and Walter S. Hilbron, treasurer, and D. Beebe.

The Monarch Fire Proofing & Sewer Pipe Co., Guthrie, Okla., has been incorporated with $300,000 capital stock by B. K. and Curtis L. McCloskey of St. Marys, Pa., and G. V. Patterson of Guthrie.

The Seaglioline Brick & Fire Proofing Co., New York City, has been incorporated with $100,000 capital stock. Directors are Ernest May, William Fechtenberg and H. H. Sawyer, all of New York City.

The plant of the Burns & Russell Company at Wicomico and Clare Sts., Baltimore, Md., has been taken over by the Maryland Terra Cotta Co., a new corporation. Four more kilns will be erected so as to double the capacity of the plant.

The West Jordan (Utah) Brick Co. has filed articles of incorporation with a capital stock of $6,000. Wm. Price is president, D. J. Kellogg, vice president, A. T. Rundquist, secretary and treasurer, Jacob Jensen, manager.

The Unionville (Mo.) Brick & Tile Co. has been incorporated with $15,000 capital stock by P. M. Moore, John W. Stanton and F. S. Stanton of Warsaw, Ohio, Lee Collins, S. H. Jackson, Frank Middleton, Frank Gibson and others.

Nels Ostrom and Frank Potter, Algona, Ia., will put in a brick and tile plant.

The Trenton (N. J.) Fire Brick Co. has increased its capital stock from $100,000 to $150,000.

Natural gas will be used for the burning of brick by the Corrigan Brick Works at Kansas City, Mo.

H. E. Powell has put into operation his new brick making plant at 11th and So. J Sts., Richmond, Ind.

J. O. H. Bennette has perfected a deal to locate his brick yard in Conroe, Texas, on the west side, within the next ten days.

Carl Barz becomes the sole proprietor of the Snyder (Nebr.) Brick Works by the buying out of his partner, Robert Peltzer.

McIntire & Williams, Marysville, Ohio, will go into the tile business, having purchased land on South Chestnut St. of J. C. Asman.

The Belington (W. Va.) Brick Company has been organize with $10,000 capital stock and will build a plant near that town.

The Kittanning (Pa.) Brick & Fire Clay Co. intends to double the size and capacity of its works at Wickboro at a cost of about $200,000.

The Macomb (Ills.) Clay Products Co. has been incorporated with $2,500 capital stock by John H. Millson, J. L. Scott and Emmett Arnold.

C. D. Chase will put in a brick plant at Aberdeen, S. Dak., for himself. Mr. Chase is an expert brick maker and erects machinery for all kinds of plants.

The Braun-Leonard Brick Co., Denver, Colo., has been incorporated with $10,000 capital stock by Ralph H. Braun, Owen L. Leonard and Irving W. Nutter.

J. T. Davie & Co., Spokane, Wash., brick manufacturers, plan to enlarge their plant north of the city to double its present capacity. A steam dryer will be added.

E. R. Wiswell, Manson, Iowa, has changed his system of making brick and tile by using the dry pan instead of crushers and has purchased the necessary additional machinery.

A. R. Coffin becomes the one-half owner by purchase in the Gustavo P. Hutej brick plant, located at Santa Maria, Mexico. Mr. Coffin has for some time been an employee of the National Railway.

The new brick industry at Lestershire, N. Y., is to be a go, as preliminary details are being made to organize the Lestershire Brick Company. W. J. Jones, president of the Lestershire National Bank, is interested in the company.

The Holloway Company of McMechen, W. Va., has been organized with $35,000 capital stock by W. B. McMechen, J. L. McMechen and J. H. Carpenter of McMechen, J. H. Crago of Wheeling, and J. R. Deegan of Bellaire, Ohio.

Arrangements have been completed for the building of a portland cement plant at Independence, Kansas, by the Kansas Portland Cement Co., of Iola. George E. Nicholson is president and general manager. The capital of the Independence plant will be $1,000,000.

Clay and Clay Property for Sale

550 Acres of Land in Cherokee County, Kansas, with ovens for making coke, natural gas for burning brick, etc. Mo. Pac. and Mo. K. & T. railroads' tracks on the property.

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Brick Yard for sale cheap. A bargain to the right party. Good market at hand. For further information address

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Capacity ten to twelve million brick a year. Inexhaustable supply of best quality clay and sand. Railroad switches in plant, first-class machinery, Sharer dryer. Good market for brick. Easy terms and at a price that makes the plant a rare bargain. Located on the Erie R. R. We invite correspondence and inspection of the work.

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One second-hand Hercules Special Brick Machine, manufactured by Horton Mfg. Co. Capacity 30 to 40 thousand per day. Machine in first-class condition. Located in central Pennsylvania. Address

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Iron Quaker Brick Machine, manufactured at Wellington, Ohio. Used but little. Cost about $500. Taken under mortgage and will sell for $150.

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For sale, reasonable, in condition—
One 5x18 foot Horizontal Tubular Boiler.
One No. 20A Penfield Hollow Brick Machine.
One 14 foot Pug Mill.
One Disintegrator,
One 40 foot Clay Conveyor, with 20 foot belt.
Forty Fire-proofing Dies, with two extensions, pullys, clutches and belting.
Reasons for sale, are making different ware.

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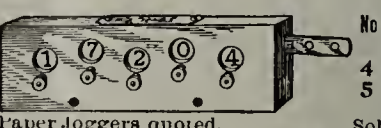

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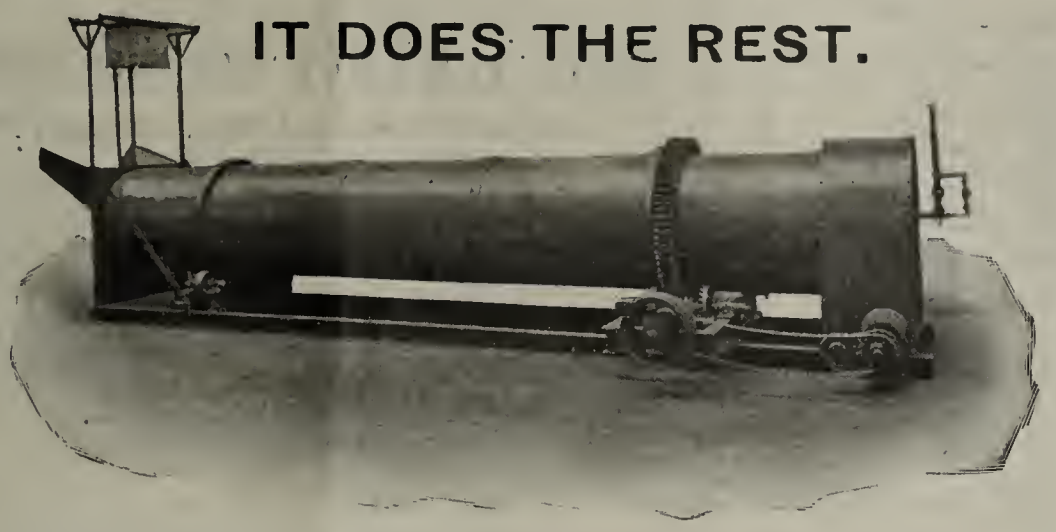

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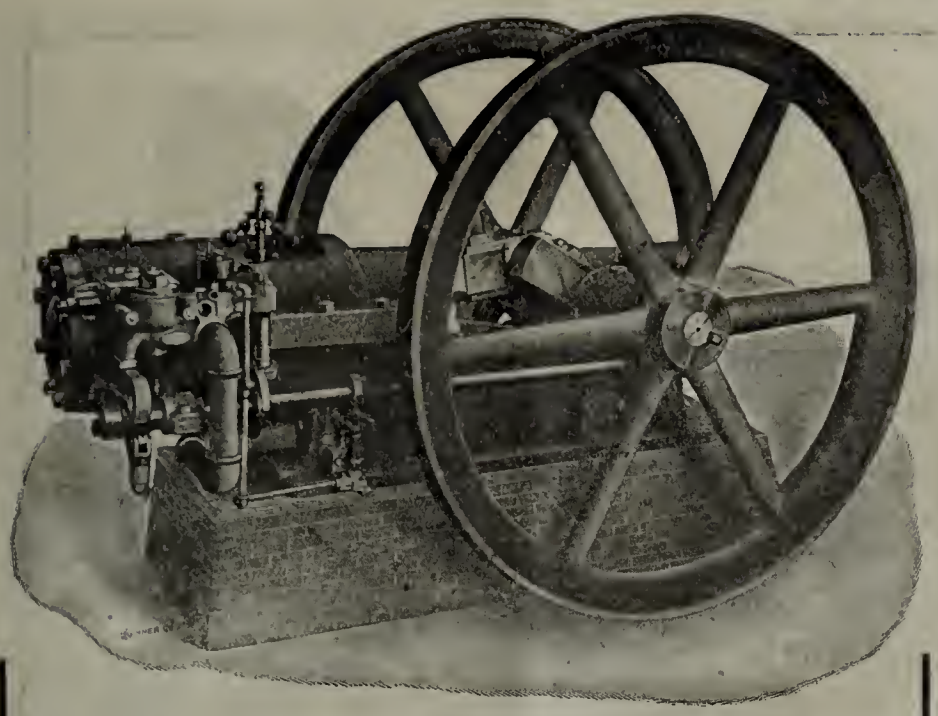

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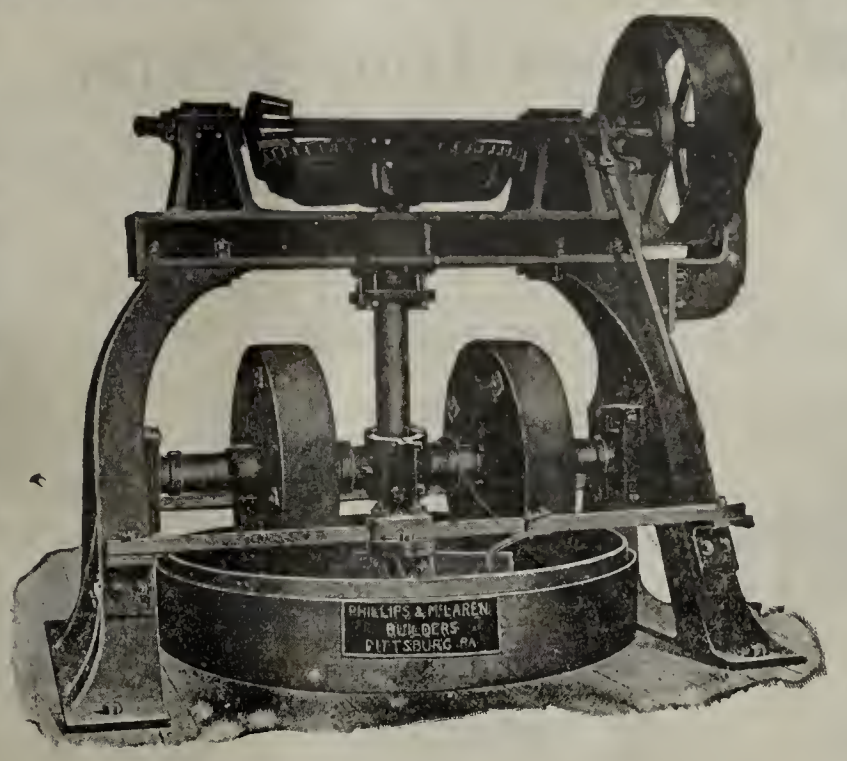

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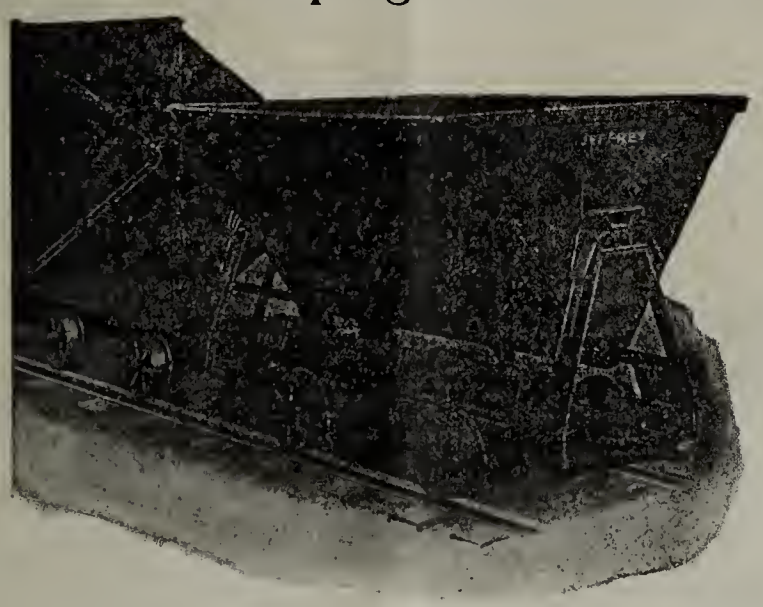

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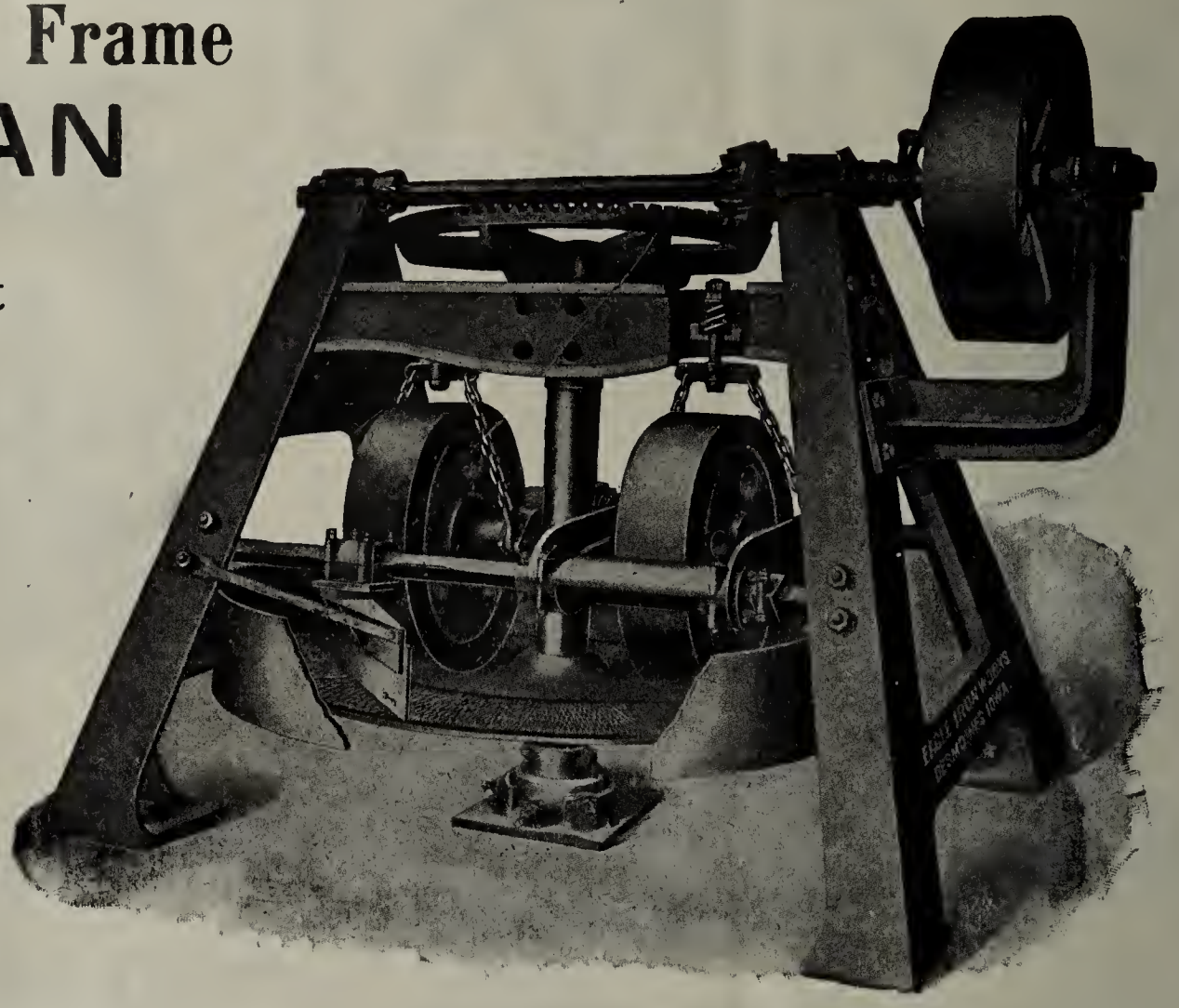

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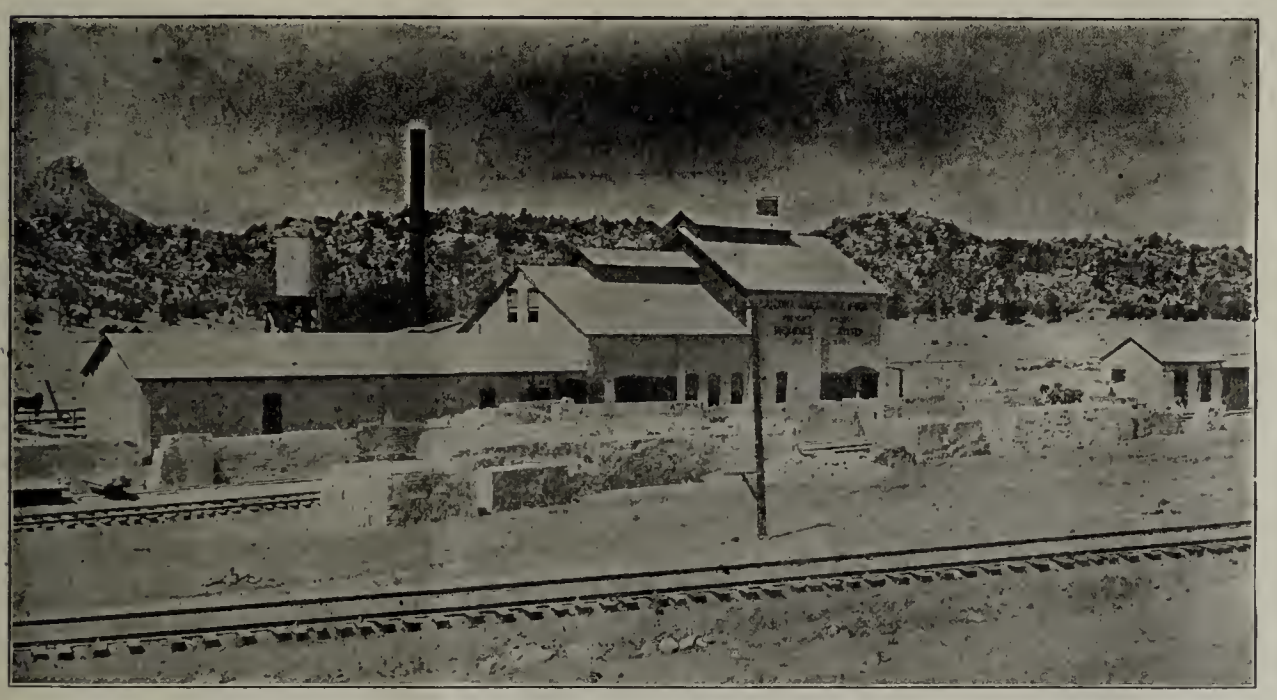

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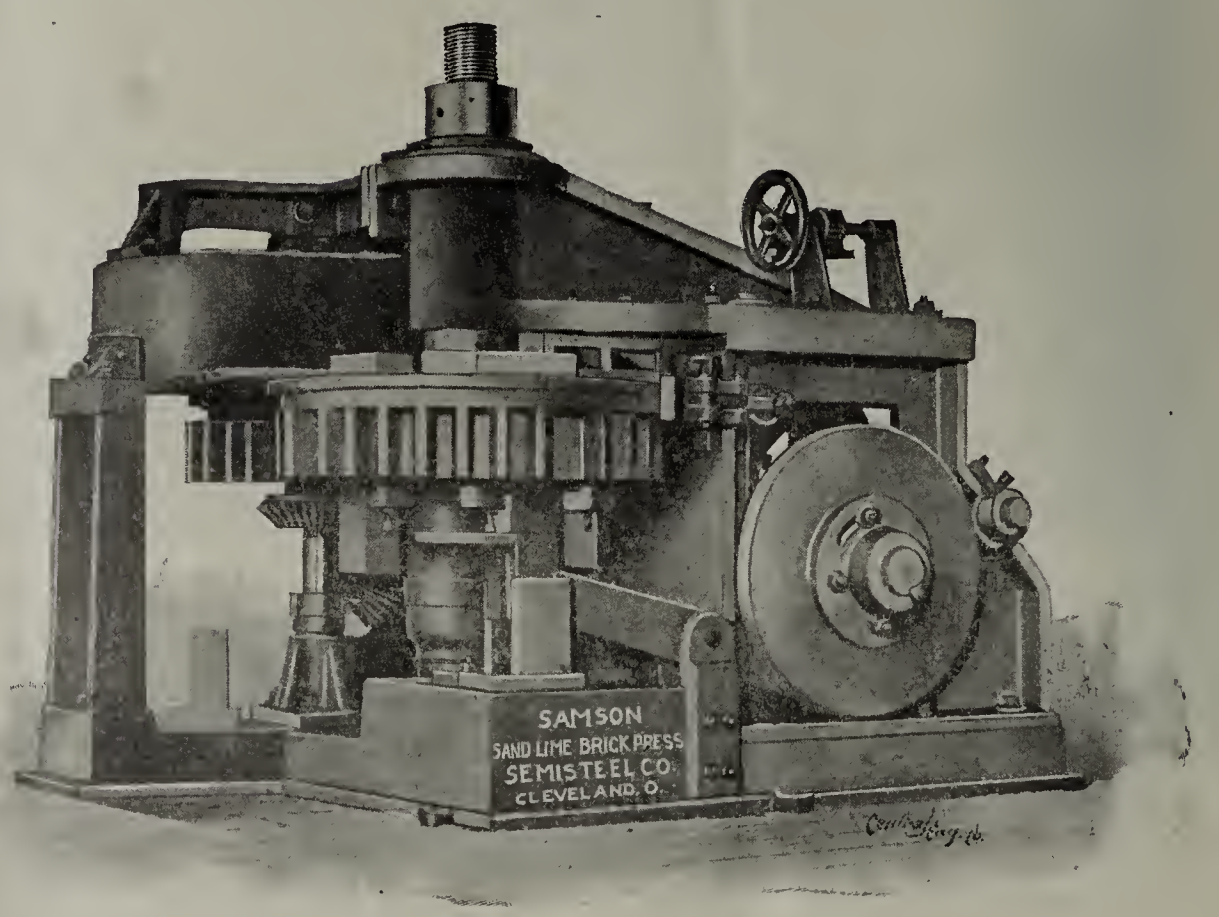

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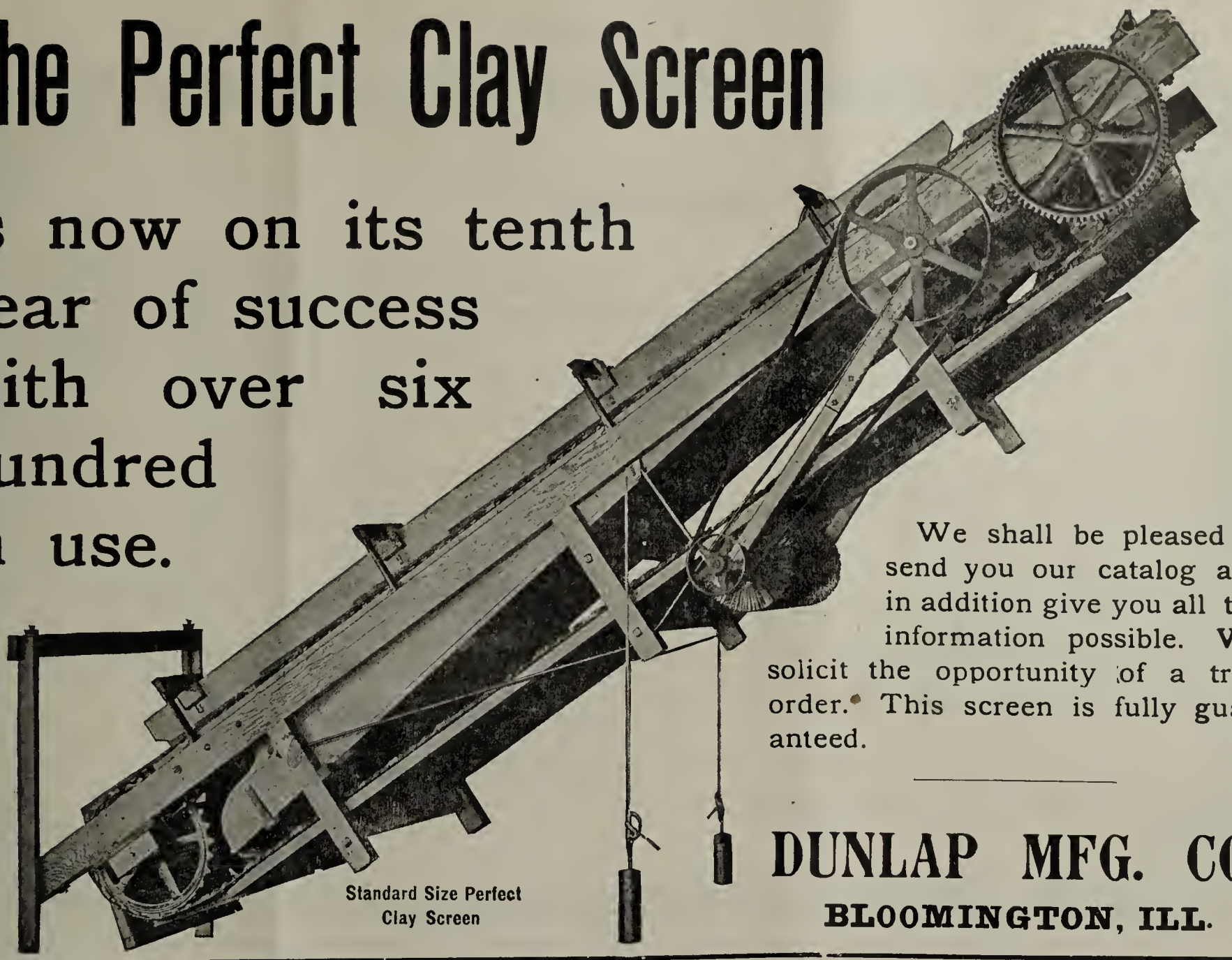

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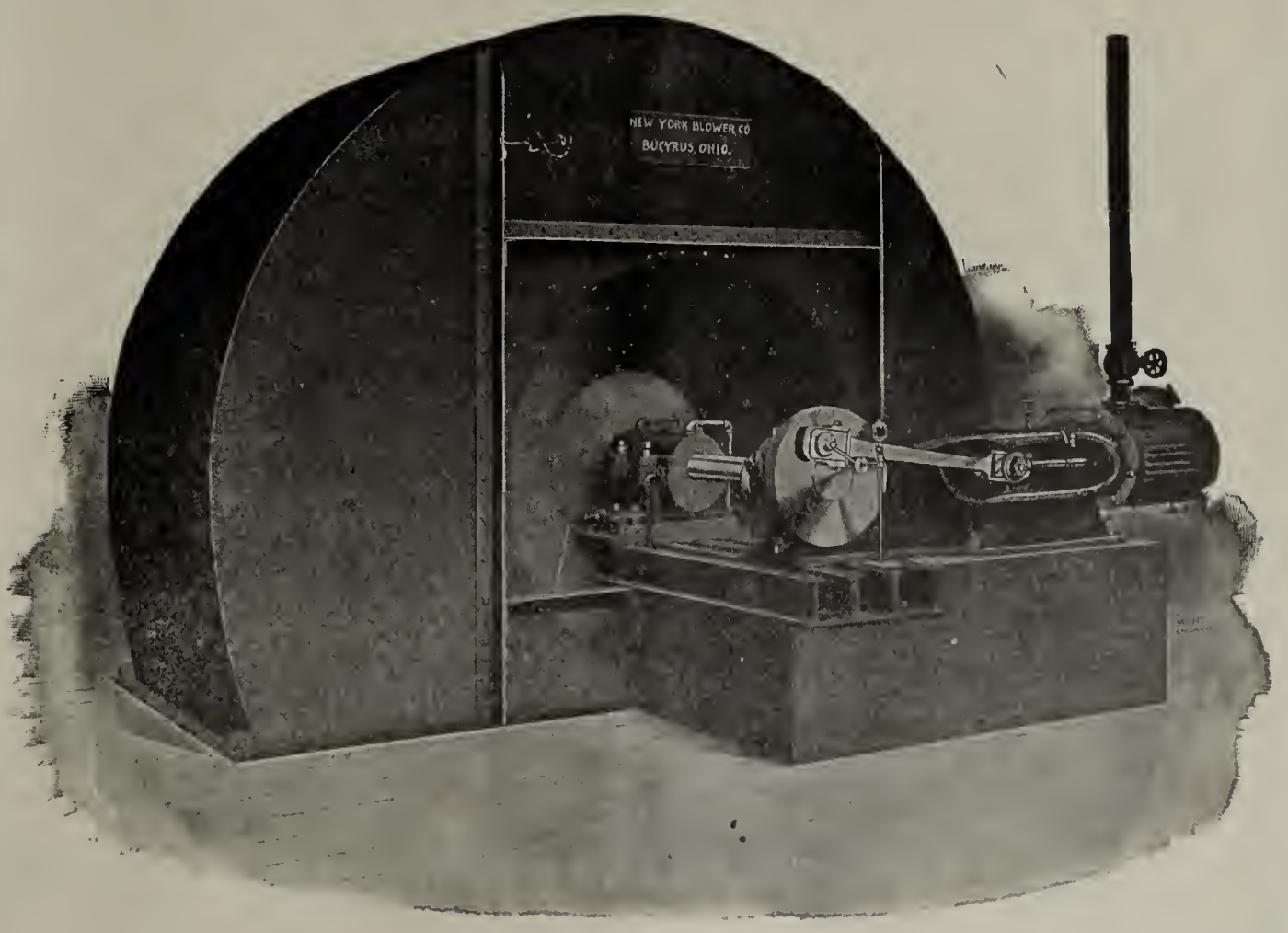

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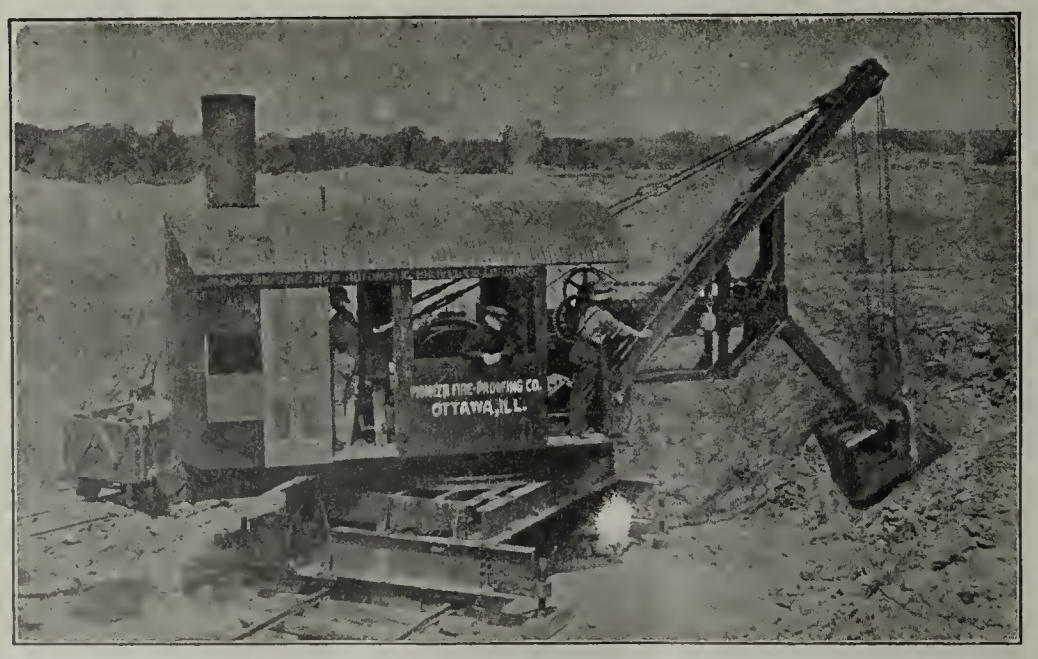

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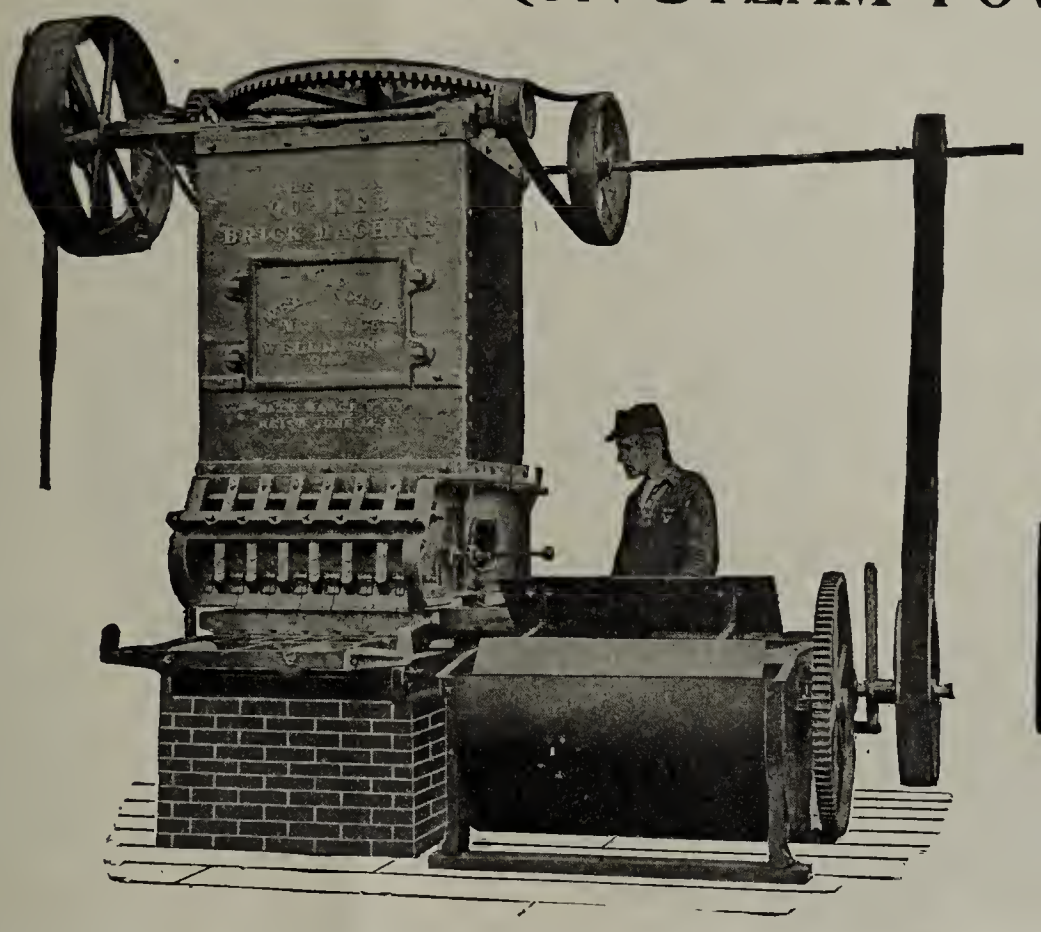

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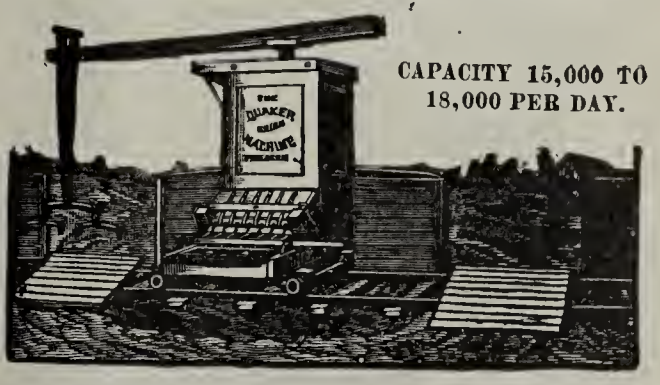

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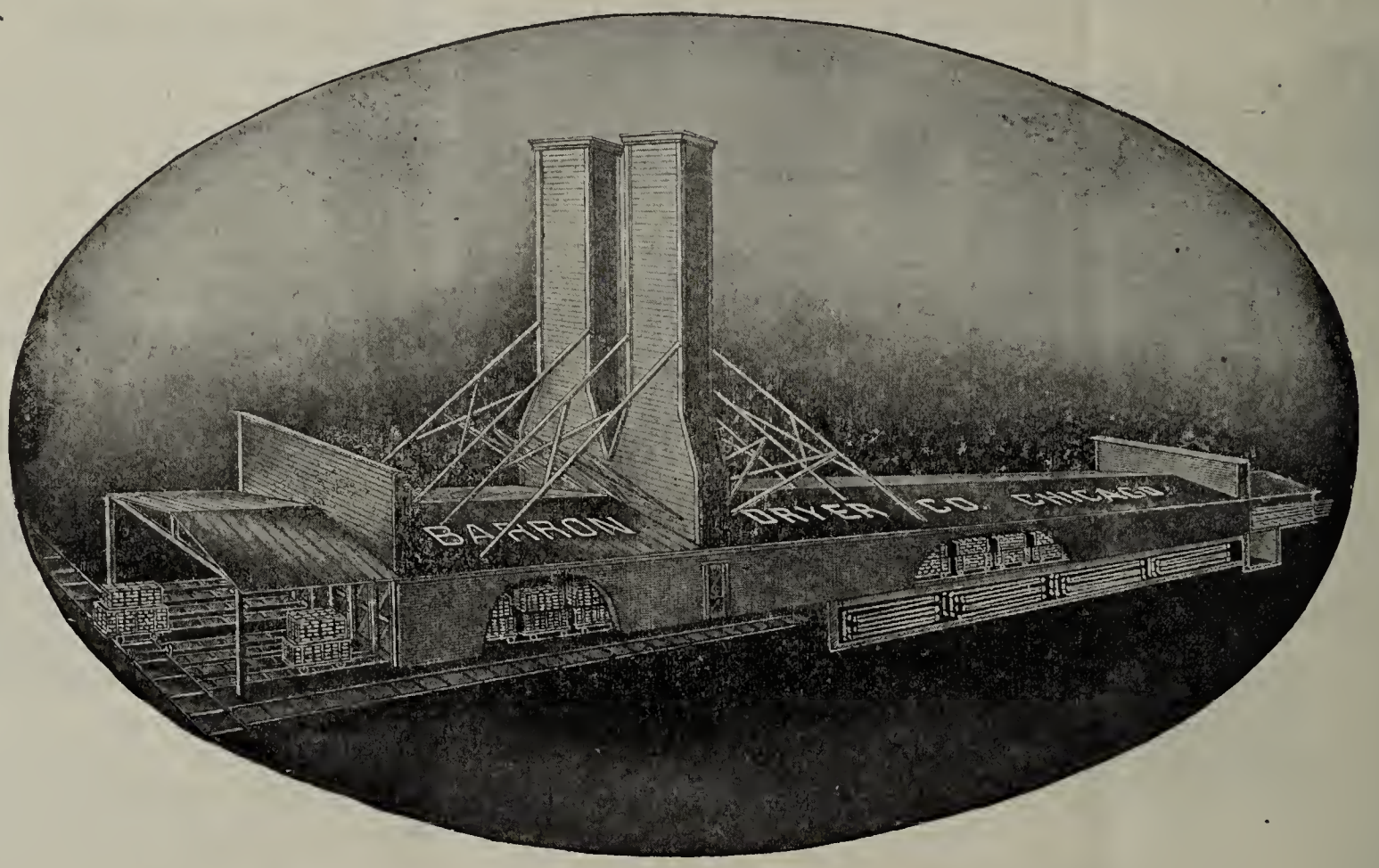


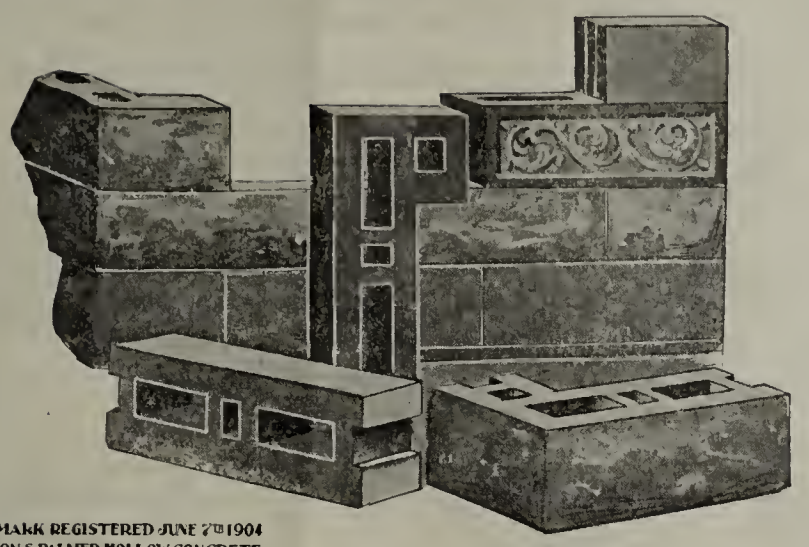
If You Are Progressive

You know that the brickmakers who are making the money in these days are those who have installed an up-to-date drying system enabling them to cope with ease with the heaviest demands of the market, their operations being uninterrupted all the year round.

This is true of them, what of your case? Why adhere still to antiquated methods subjected to weather limitations. Determine to install the most effective drying system in existence and apply for information and quotations to the

BARRON DRYER COMPANY

Temple Court Building, 225 Dearborn Street, CHICAGO, ILL.



TRADE MARK REGISTERED JUNE 7TH 1904 BY HARMON S. PALMER HOLLOW CONCRETE BUILDING BLOCK COMPANY.

PALMER'S MACHINE

IT IS THE BEST BY EVERY TEST

ALL OF THESE POINTS ARE COVERED BY PATENTS TO US AND NO OTHERS. FOUR PARTIES HAVE ALREADY BEEN ENJOINED BY US IN UNITED STATES COURTS FOR INFRINGING OUR PATENTS.

BECAUSE:

It makes all lengths from **four** to **thirty-two** inches.

It makes all widths from **four** to **eighteen** inches.

It makes all heights from **one** to **nine** inches.

It makes all angles for **bay-windows.**

It makes blocks of different contour by removable face plates with patented designs.

It makes **joist** blocks and **nelting-courses.**

It was invented by a **practical** builder who knew what was necessary.

Its proportion as to strength and weight are correct.

It is not a cumbersome and bungling piece of mechanism.

Every block necessary to complete system of construction made by Palmer's machine. No waste.

Don't be deceived into buying a machine just because it makes a hole in a block. This is like poison to our business.

Beware of charlatans and mountebanks who know nothing of the business, but want the public's money on the reputation and success of others.

THE HARMON S. PALMER COMPANY

WASHINGTON, D. C.

SEWER PIPE MACHINERY

PRESSES AND DIES

I. E.

TRAP DIES

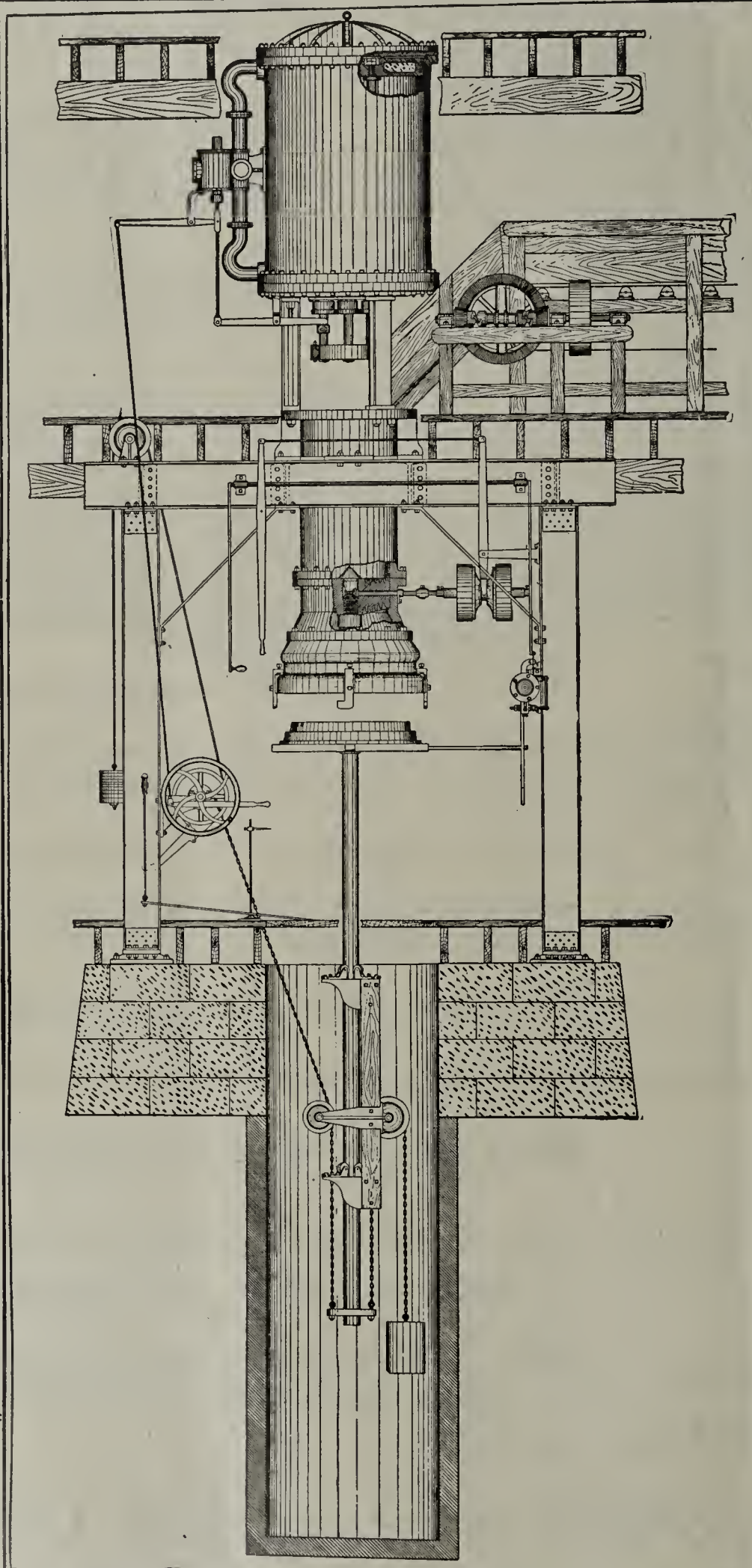
CLUSTER TILE DIES

FLUE DIES

COPING DIES

RING DIES

TUYERE AND SHAPE DIES FOR BESSIMER FURNACES



NOZZLE AND SLEEVE PRESSES

TUYERE PRESSES

DOUBLE END HORIZONTAL STEAM PRESSES

DRY AND WET PANS

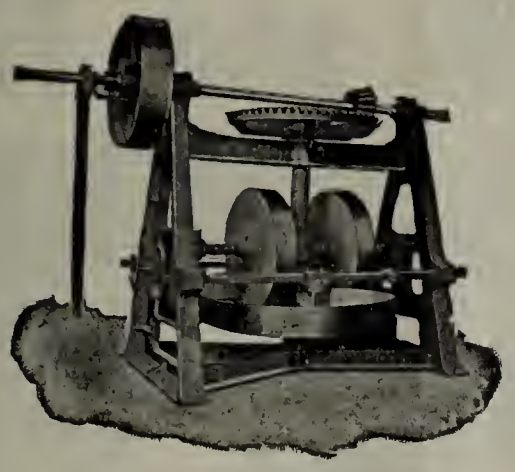
CLAY MILLS COMBINATION CLAY PANS

CLAY WORKING TOOLS

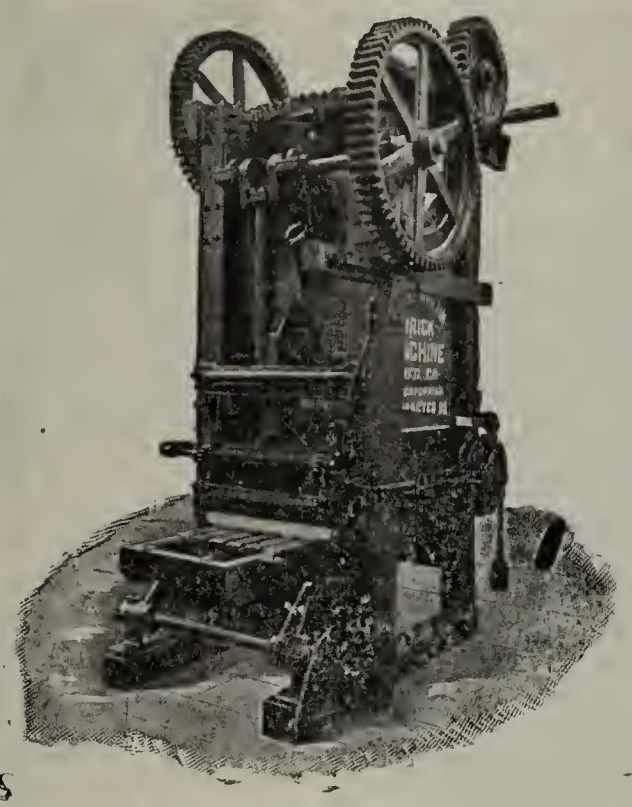
THE TURNER VAUGHN & TAYLOR CO.

WRITE FOR PRICES STATING CAPACITY

Cuyahoga Falls, Ohio, U. S. A.



Dry or Wet Pans



Hand Represses

WHEN YOU BUY -- BUY RIGHT

The prospective purchaser of an outfit of Brick Making Machinery should carefully investigate the merits of the machine he proposes to adopt, and ascertain if it is adapted for his particular clay.

The machine that works successfully in one place may be a complete failure in another.

Before WE recommend a certain Machine we examine a sample of the material, and consequently can select the machinery best adapted to secure Satisfactory Results.

We will promptly submit a detail proposition if you will give us the opportunity; *no charge* for examining a sample of your clay and giving our candid opinion.

The Henry Martin Brick Machine Mfg. Co., Inc.
Lancaster, Pa., U. S. A.

"MARTIN SYSTEM"
STEAM DRYER
PATENTED

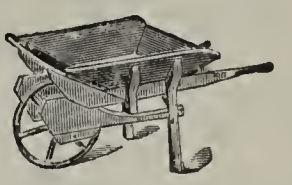
Simple in Construction.
Economical in Operation.
Skilled labor Unnecessary.
Dries the brick over night.
Uses no Cars, Fans, Blowers or Tunnels.
Absolutely Fire-proof.
No Wheelers - No Trackers with our new AUTOMATIC BRICK HANDLER.

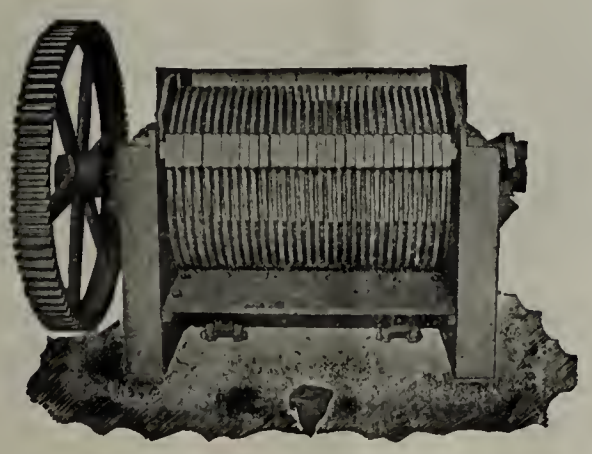
¶ The successful drying of your brick over night, without checking or cracking, is a point worth considering, when investigating the Dryer question.

¶ With the "Martin System" skilled labor is not required and hence a saving in the pay-roll.

¶ The heat is under absolute control of the operator all the time and can be regulated to suit the most tender clay.

¶ Ask for Dryer Booklet.



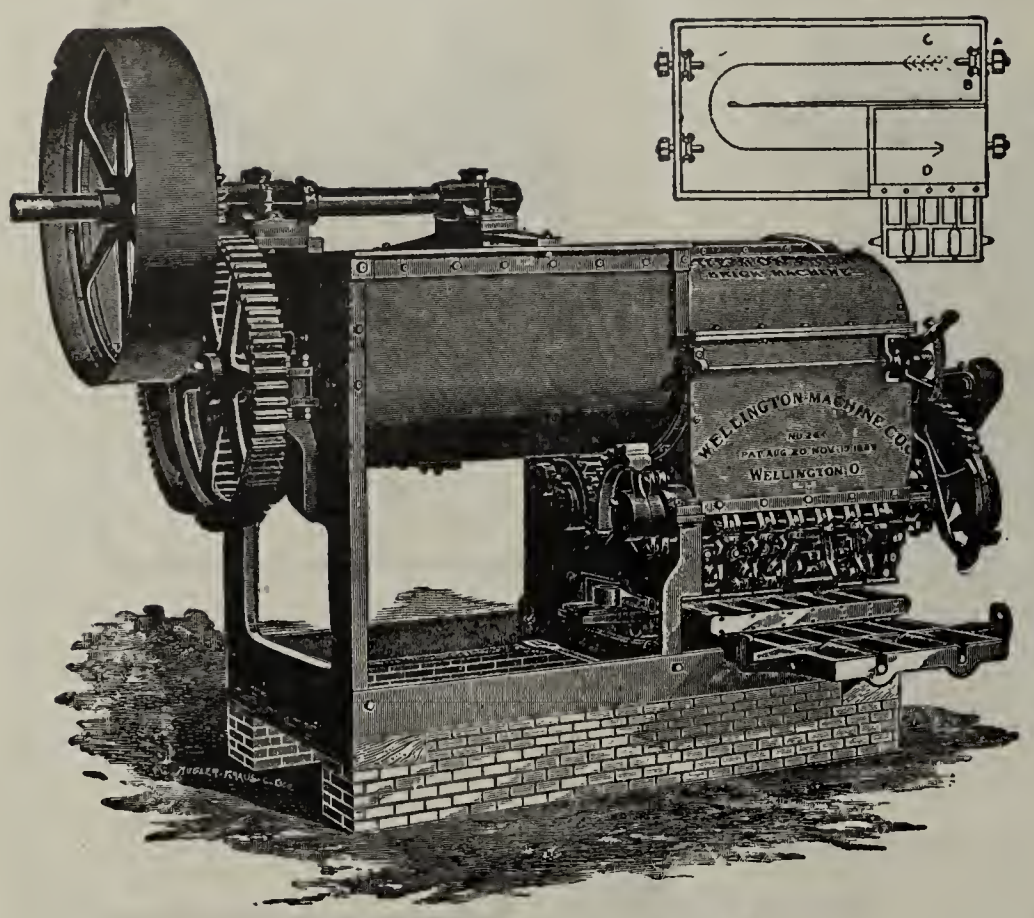


Clay Screens

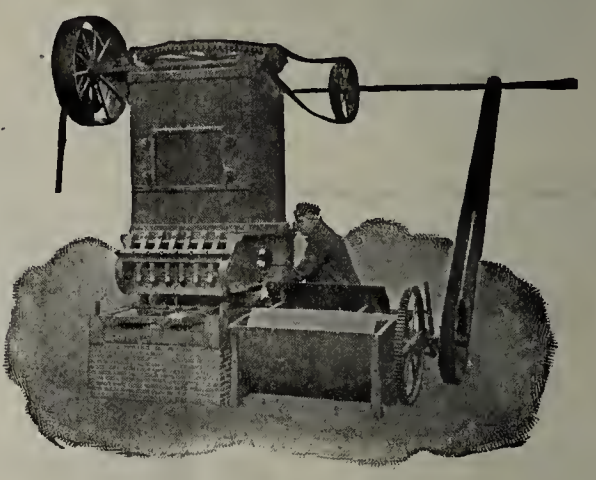
Sand Dryers

Stiff-mud Wire Cutters

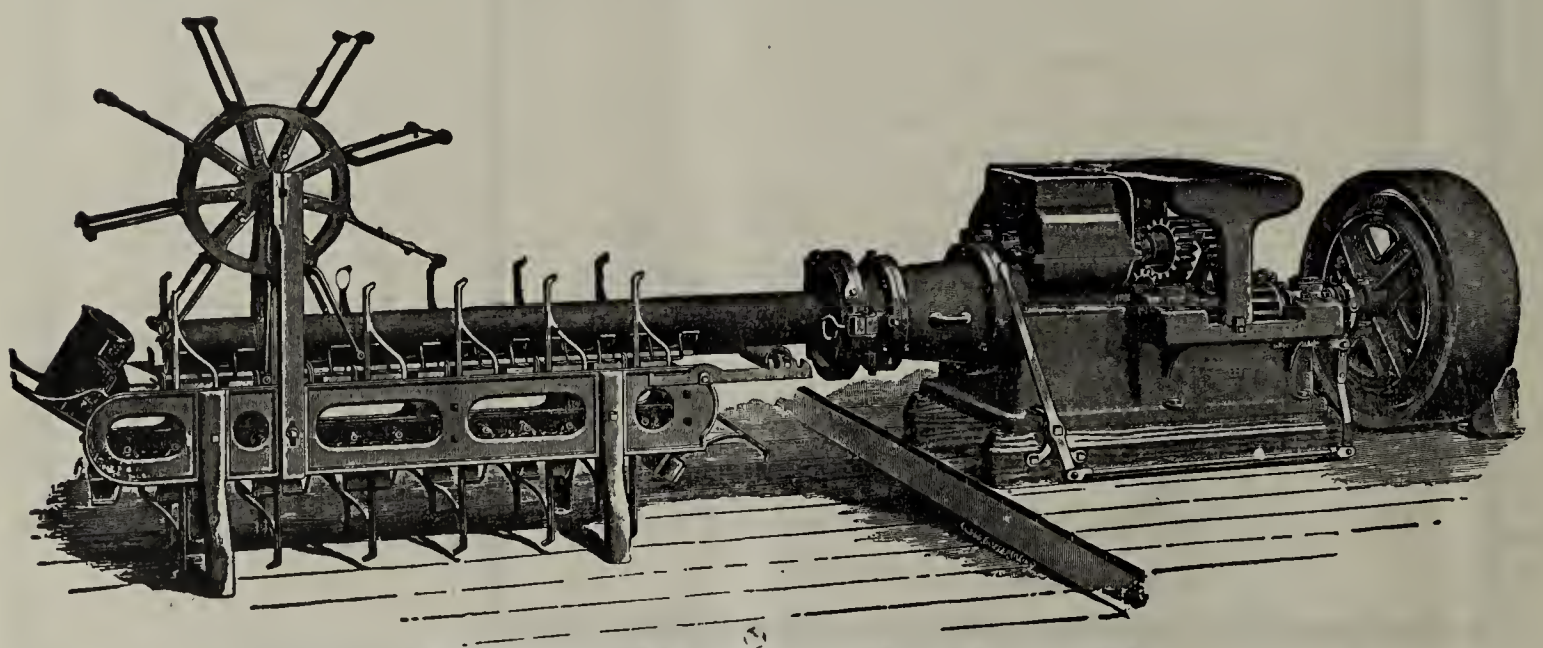
BRICK and TILE MACHINERY



MONARCH STOCK BRICK MACHINE
Capacity, from 30,000 to 50,000



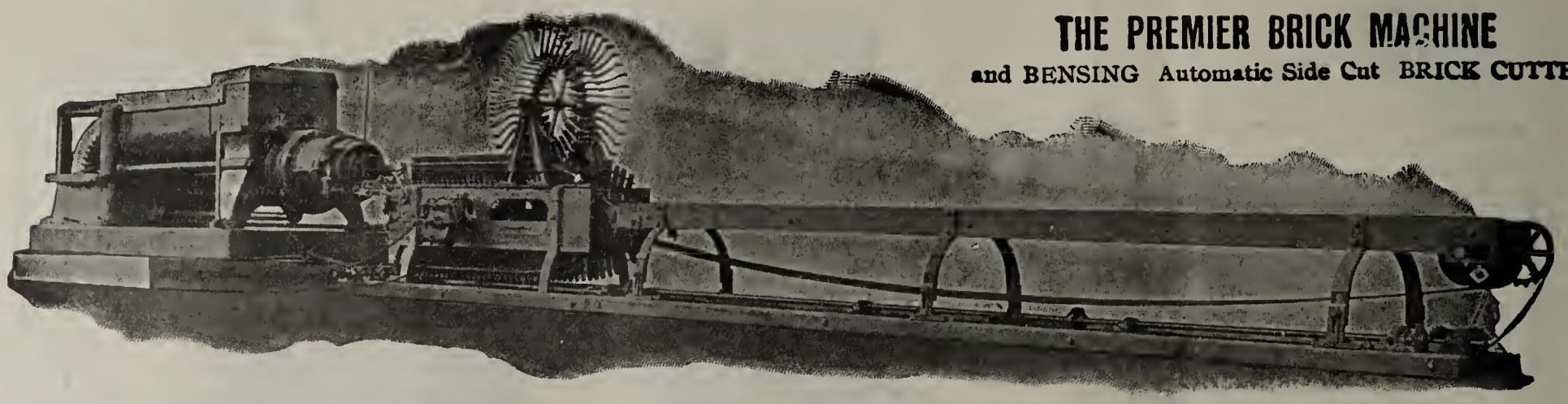
THE QUAKER
Horse or Steam Power. Capacity, 20,00 to 35,000



BRICK OR TILE MACHINE, WITH AUTOMATIC TABLE

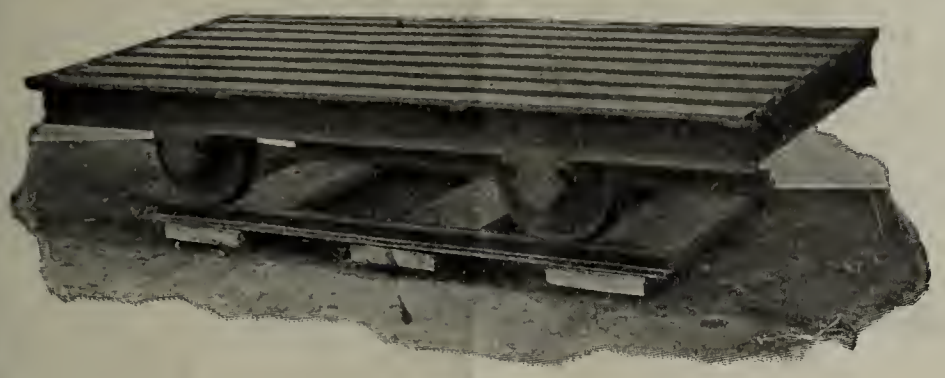
"We Fulfill our Guarantees."

THE PREMIER BRICK MACHINE
and BENSING Automatic Side Cut BRICK CUTTER

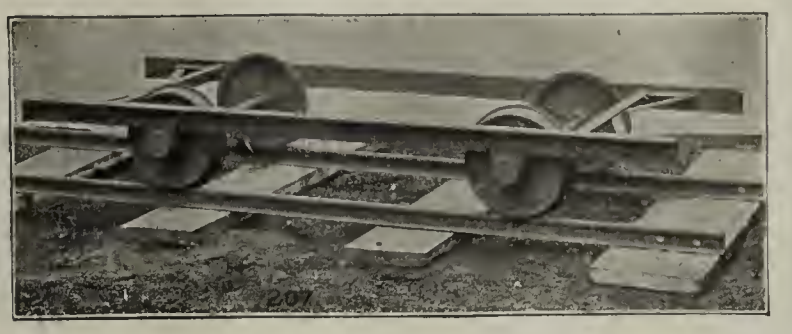


We have a full line of Clay-Working Machinery, sand mold brick machines, auger brick and tile machines, Automatic side and end cut tables, dies, molds, barrows, trucks, sanders, represses, pug mills. *The only down cut, reel side brick cutter on the market for cutting face brick that do not require repressing.* We can guarantee to make you a better face brick with this cutter than you can get from any other cutter on the market.

B. E. LaDOW, 701 Dwight Building, KANSAS CITY, MO.



No. 212.
STEEL DECK CAR, CHANNEL FRAME.
For Drying Brick, Sewer Pipe, Etc.



No. 207.
FLAT CAR, WOODEN DECK.
For Brick, Tile, Etc.

No. 52.
TRUNION DUMP CAR.
For Handling Coal, Sand, Ashes, Etc.

The Cleveland Car Company

West Park -:- Ohio

Designers and Builders of

Complete Equipment for Narrow Guage Railroads

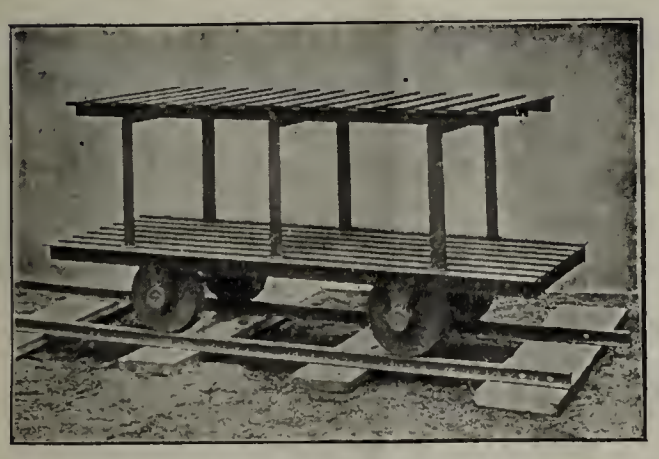
No. 50.
ONE SIDE DUMP CAR.
For Dumping Into Dry Pans, Disintegrators and Crushers.

No. 523.
RACK CAR, HEAVY TYPE.
For Use With Coke Oven, Furnace and Cupola Block.

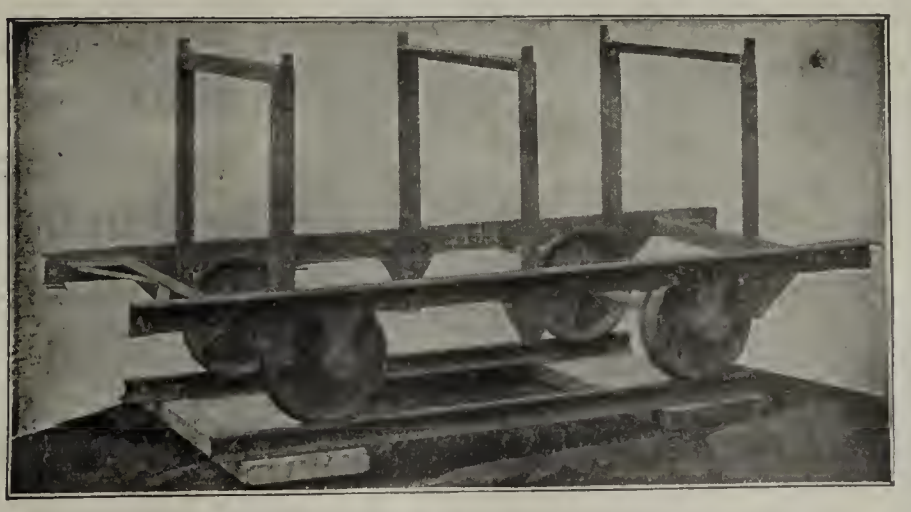
Dryer Cars of Every Description, Dump Cars, Turn Tables, Transfer Cars, Switches, Frogs, Rails, Etc.

Overhead Trolleys, Kiln Doors, Furnace Fronts, Grate Bars and Brick Barrows : : : :

No. 31.
END DUMP CAR.
Adapted to Handling Coal, Shale, Sand, Etc.

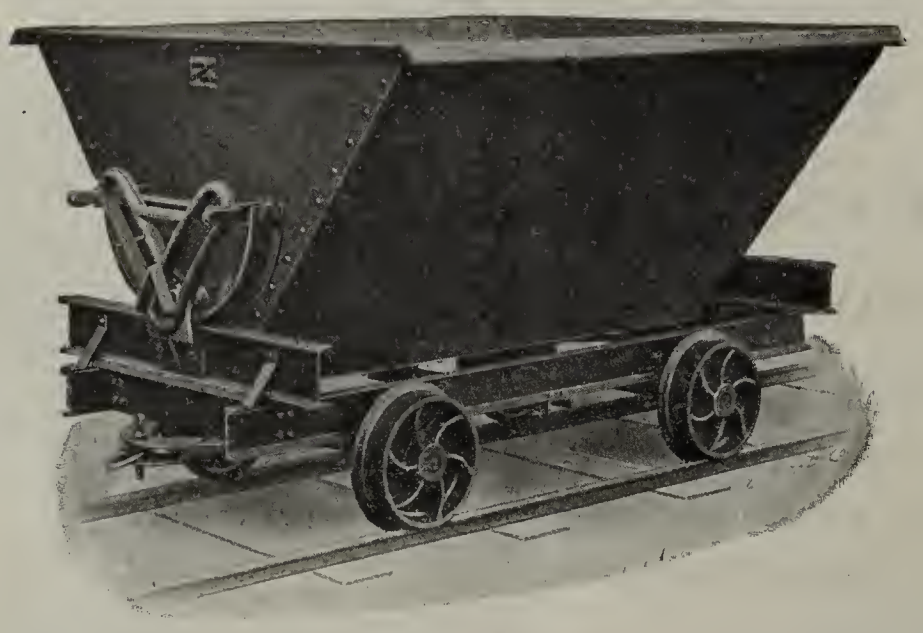


No. 244.
DOUBLE DECK CAR, STEEL DECKS.
For Brick, Tile, Fire-Proofing, Etc.



No. 245A.
DOUBLE DECK CAR, WOODEN DECK.
For Brick and Other Clay Products.

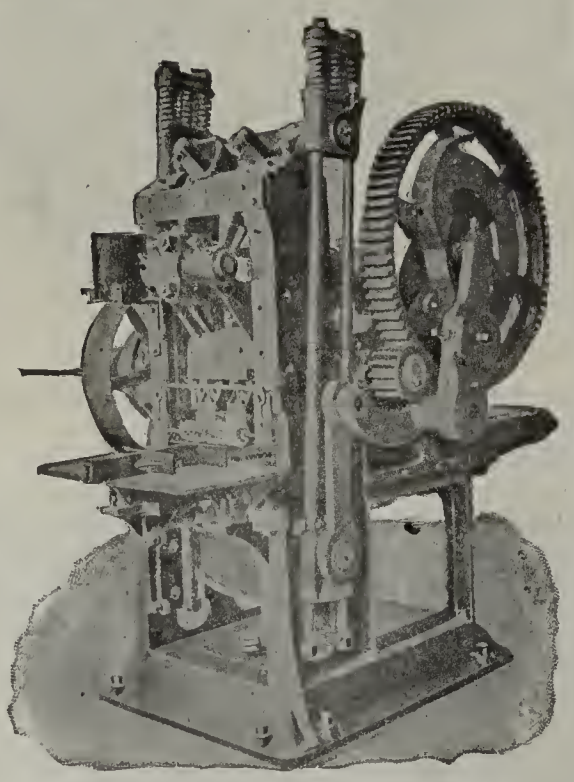
Are Your Clay Cars Satisfactory?



Clay Car.

If not, we can send some which we guarantee will be. They have no chains or pins to get lost or broken, cars cannot overdump, are self-locking, self-centering, easy running and durable.

We also build dryer cars of all kinds for all purposes.



Richardson Double Die Repress.

The Richardson Repress has all the features of merit that are demanded of a machine of this kind. Has enough depth of mold to make the largest size paving brick. All the working parts are above dies out of the way of waste clay. It has a slow pressing movement with double pressure, bringing out distinctly all markings and lettering. The working parts are adjustible to wear. It requires very little power and costs little to keep in repair.

Kindly write us for catalogs and full information.

The Ohio Ceramic Engineering Company

50-56 Fall Street, Cleveland, Ohio.

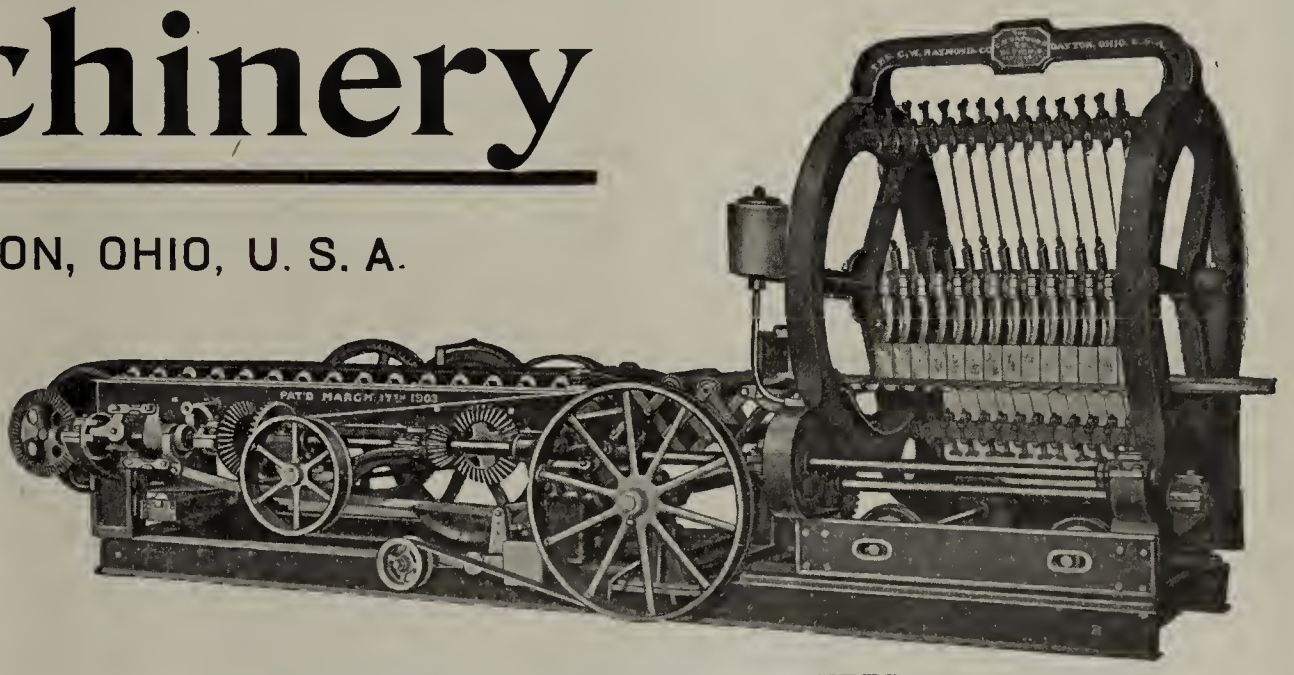
COMBINATION BRICK MACHINE

THE C. W. RAYMOND CO

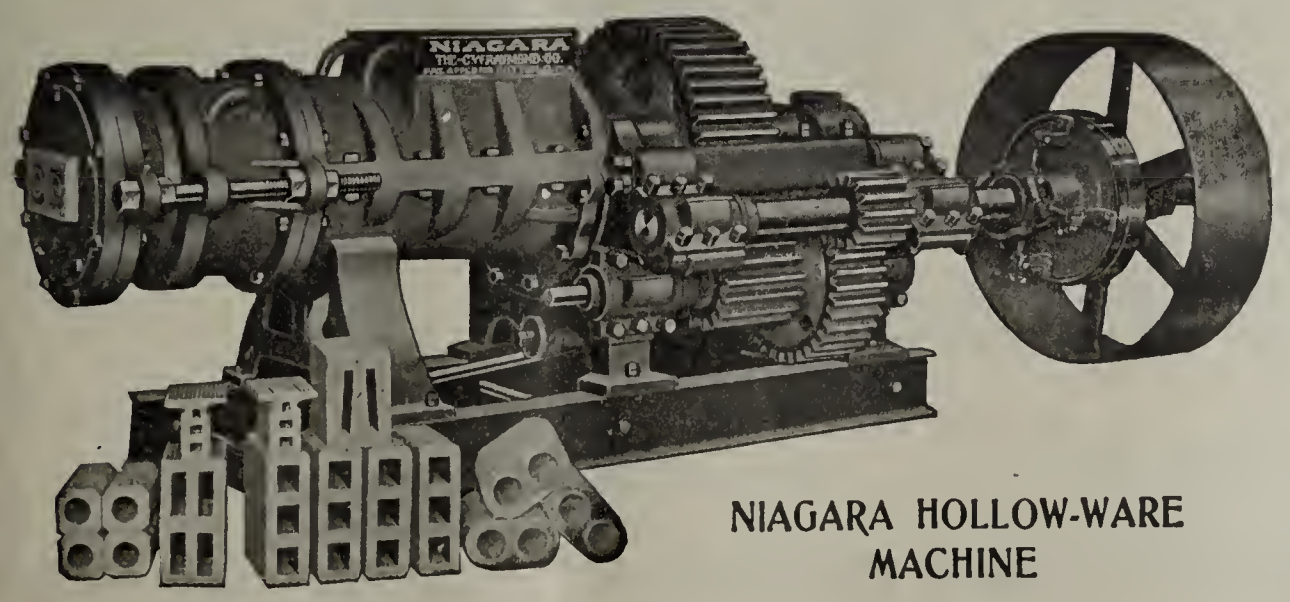
Clay-Working Machinery

DAYTON, OHIO, U. S. A.

NEW YORK
39—41 Cortlandt Street
ST. LOUIS
315 Frisco Building
PITTSBURG
1425 Park Building



AUTOMATIC DOWN-CUT CUTTER

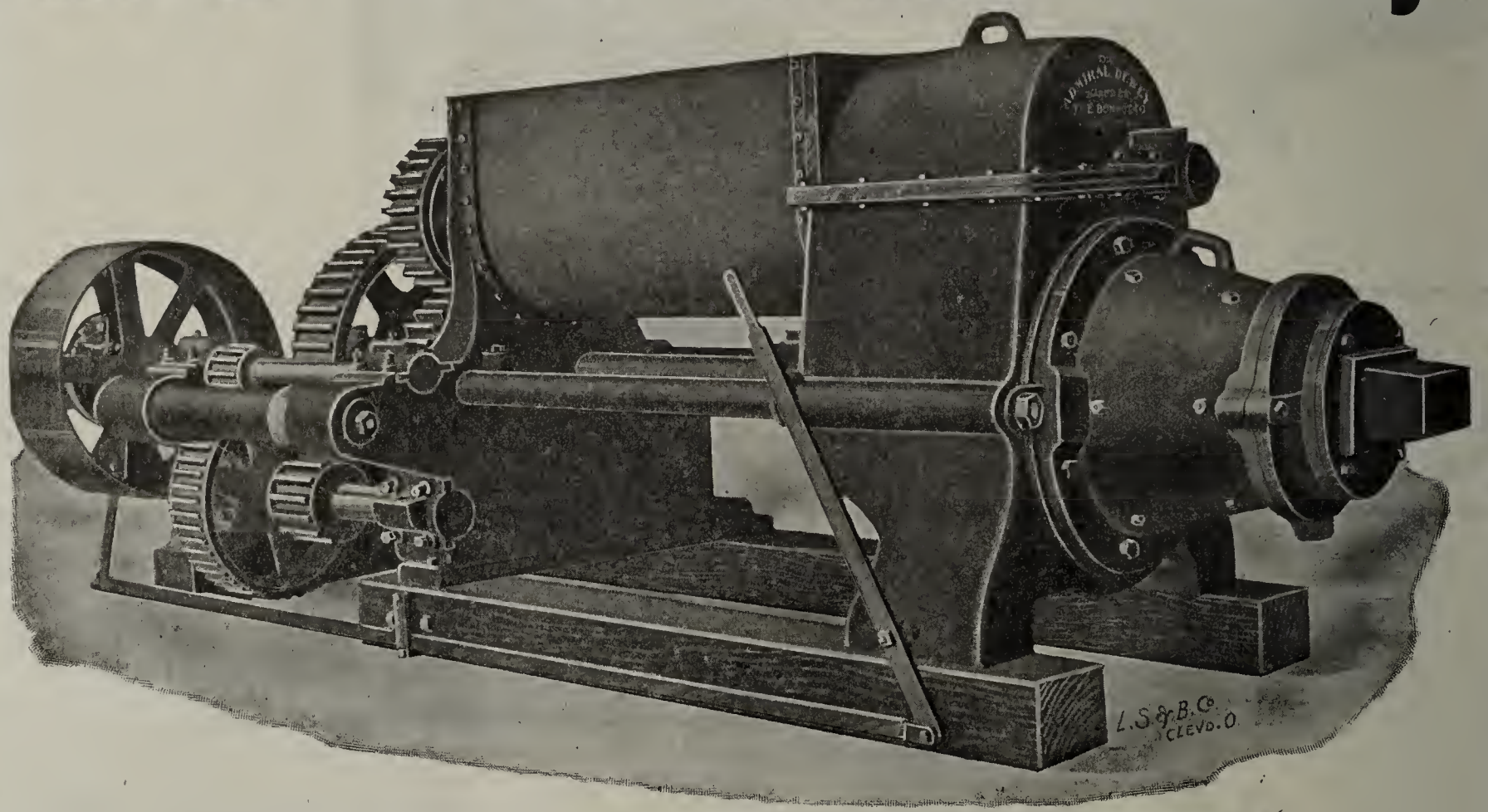


NIAGARA HOLLOW-WARE MACHINE

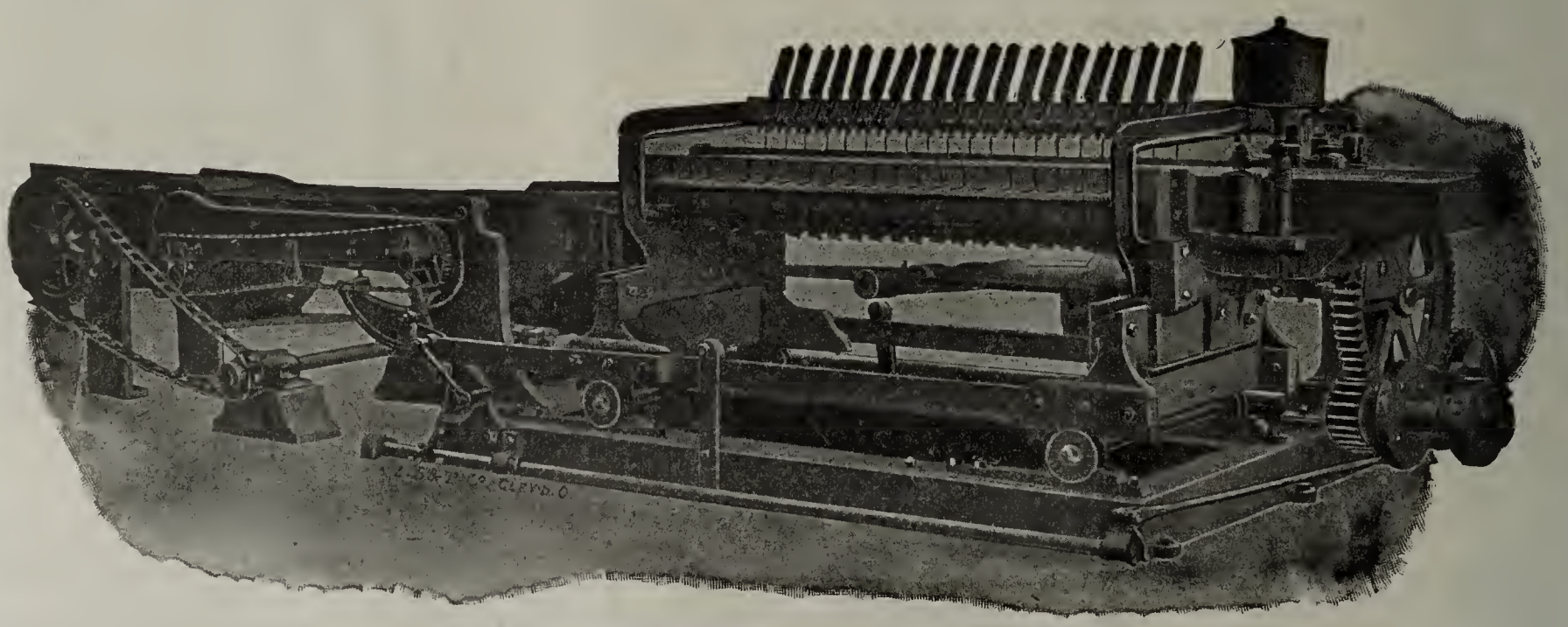
Raymond Machinery Creates New Business for the User Better Brick and more of them.

CATALOGUE

Modern Brick Machinery



SPECIAL COMBINED BRICK MACHINE AND PUG MILL 100,000 daily capacity.
AUGER BRICK MACHINES 10,000 to 100,000 capacity, five sizes.



AUTOMATIC SIDE CUT TABLE. Simple, positive, durable.

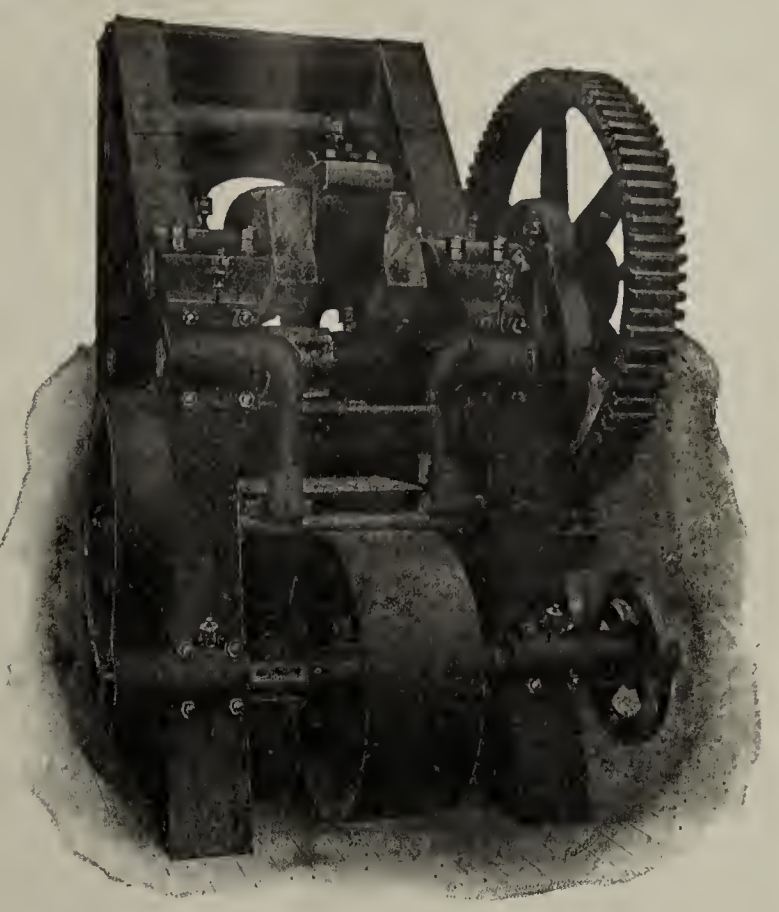
COMPLETE EQUIPMENTS FOR BRICKMAKERS. *ASK FOR CATALOGUE*

THE BONNOT COMPANY, Canton, Ohio.

—WESTERN AGENTS—

CHICAGO BRICK MACHINERY CO., - - 77 Jackson Boulevard, Chicago, Ill.

NEW MODEL BERG BRICK PRESS



Back View.

Still in the Lead

AND

One Step Further Forward

Even stronger than ever and all self-contained. Greater pressure and fewer working parts than any other machine. Simple, massive, compact. Running mechanism placed in rear, as shown in upper cut, enabling this machine to be SHIPPED IN ONE PIECE.

MANUFACTURED BY

ANDERSON FOUNDRY & MACHINE WORKS

Anderson, Indiana.

SOLD BY

CHICAGO BRICK MACHINERY COMPANY

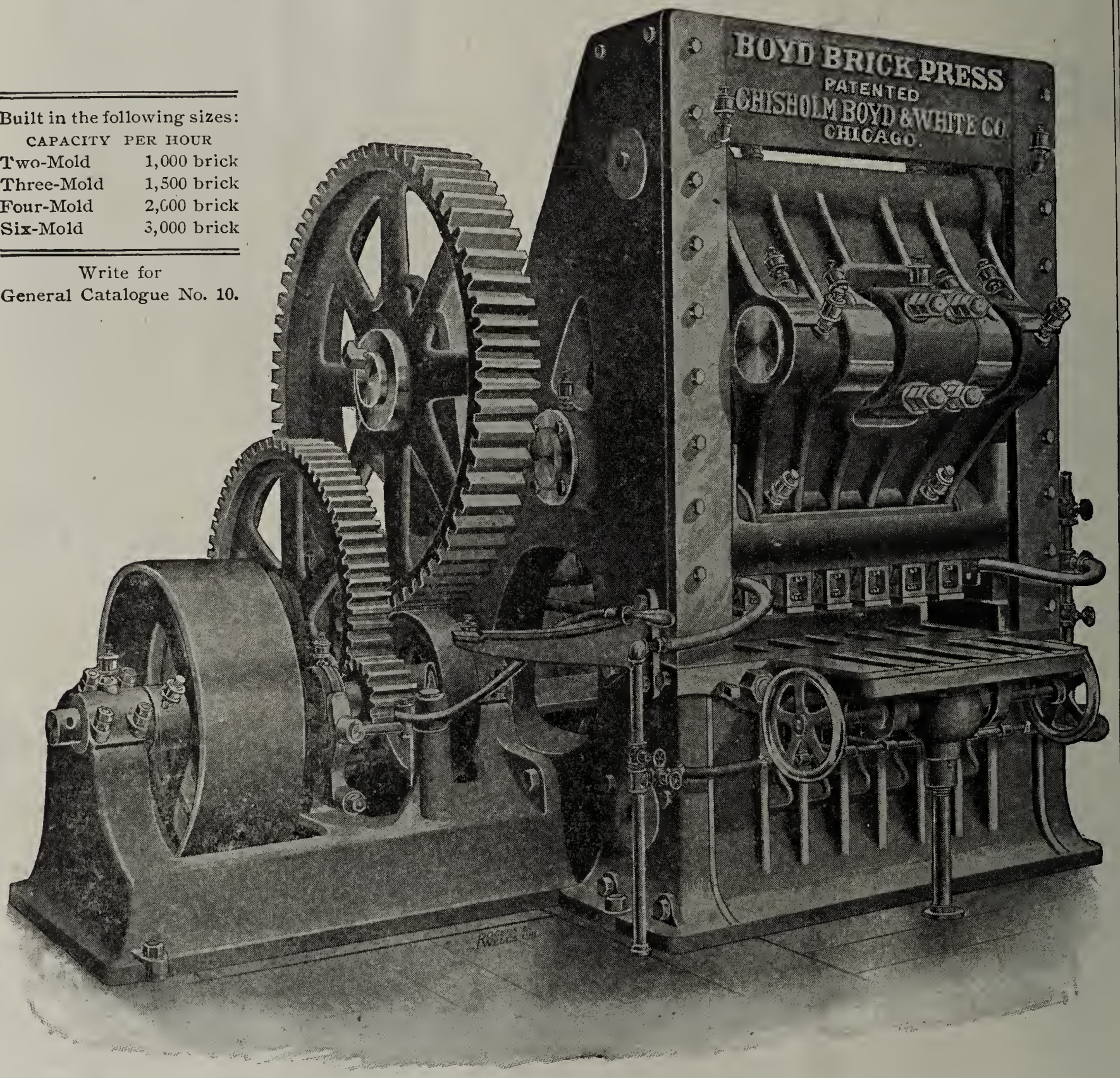
77 Jackson Boulevard, Chicago.

The Boyd Brick Press

Built in the following sizes:

CAPACITY	PER HOUR
Two-Mold	1,000 brick
Three-Mold	1,500 brick
Four-Mold	2,000 brick
Six-Mold	3,000 brick

Write for
General Catalogue No. 10.



Another Record for the Boyd Press:

Six of our SIX-MOLD PRESSES in use on ONE YARD since 1892. Average cost of repairs for each machine One Dollar per year.

THE BOYD PRESS has always been distinguished for originality in design and construction. It will make better brick from clay or shale than can be made from the same material by any other press. It is selected and purchased by the most progressive Brick Makers. The largest and most successful brick plants in the country are using Boyd Presses.

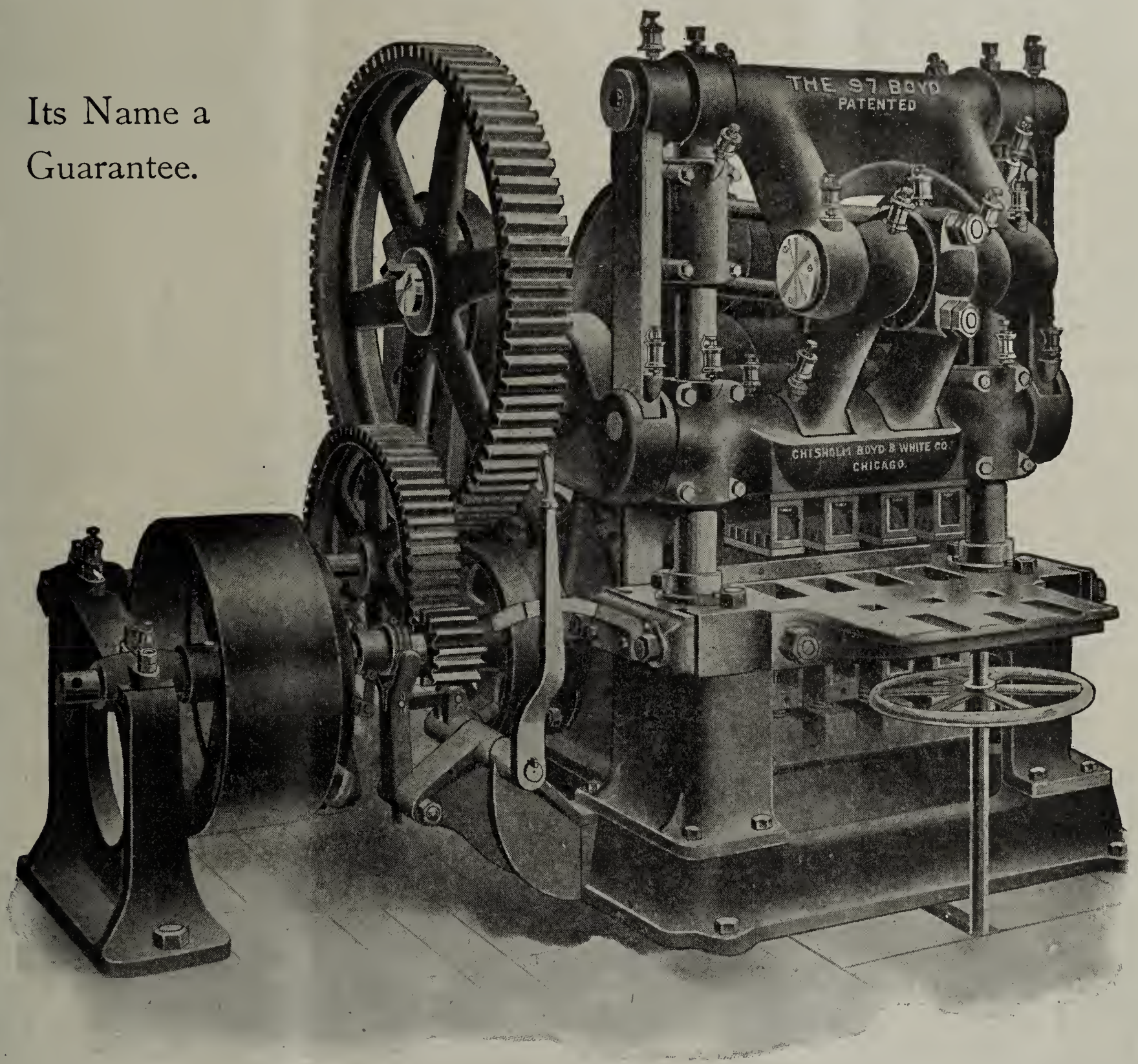
Chisholm, Boyd & White Company

Office and Works, 57th and Wallace Sts. **CHICAGO, ILL.**

The Boyd Brick Press

The '97 Model

Its Name a Guarantee.



THE '97 MODEL BOYD BRICK PRESS has enormous strength and great durability; it is compact; the adjustments are convenient; it operates quietly and smoothly; the workmanship and material are of the best; the design ingenious, and shows the most perfect application of scientific and mechanical principles to the art of brickmaking.

THE BOYD is the only Brick Press provided with an independent adjusting device for regulating the amount of clay in the molds and the pressure on the brick. This feature positively ensures equal pressure and finish on both sides of the brick, and no granulated or soft centers.

Sent on trial and fully guaranteed. Seventy presses of this pattern now in use. Cannot be broken in pressing brick. Write for descriptive catalogue No. 9.

Chisholm, Boyd & White Company

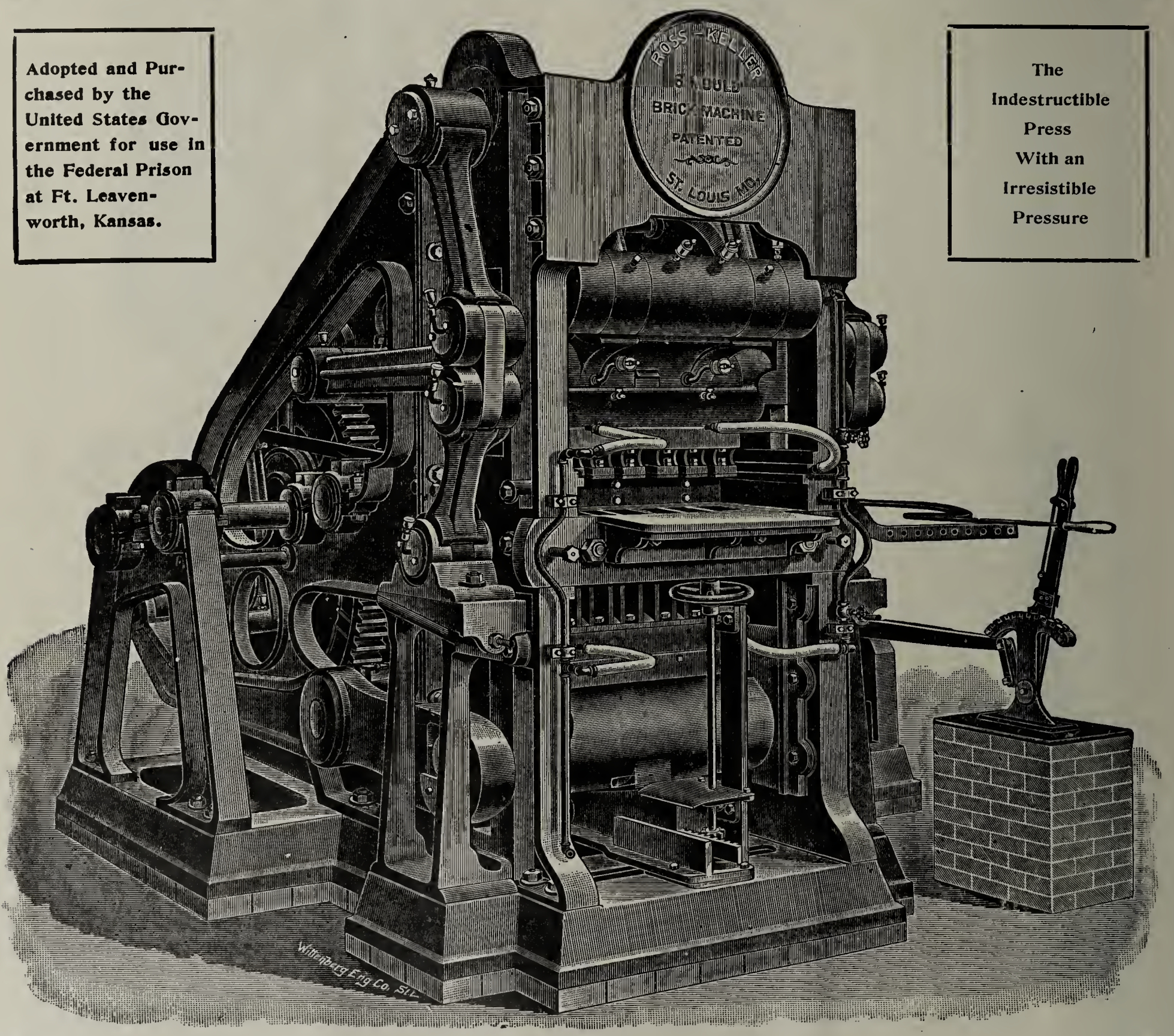
Office and Works, 57th and Wallace Sts. **CHICAGO, ILL.**

SAND-LIME BRICK MACHINERY

We are building and equipping Sand-Lime Brick Plants complete and we guarantee satisfactory results : : :

We manufacture a full line of Clay & Shale Dry Press Machinery : : : : : : :

Adopted and Purchased by the United States Government for use in the Federal Prison at Ft. Leavenworth, Kansas.



The Indestructible Press With an Irresistible Pressure

For prices and particulars address

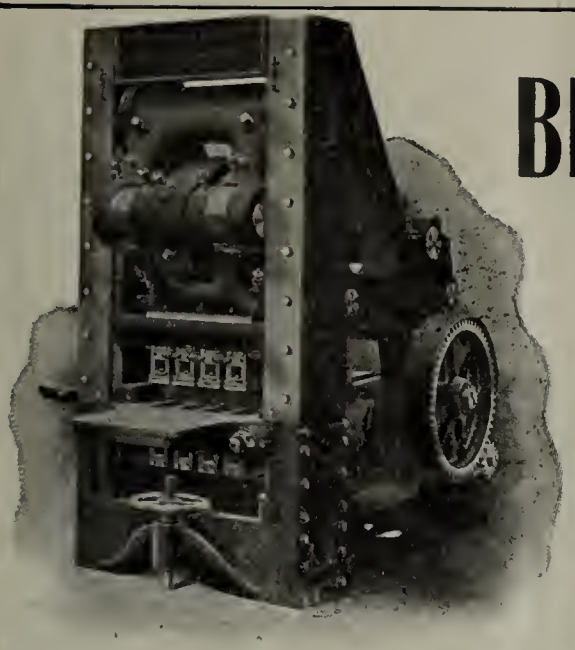
Ross-Keller Triple Pressure Brick Machine Co.

GEO. M. McDOWELL, Sales Agent
for Pacific Coast, Portland, Ore.

FULLERTON BUILDING, ST. LOUIS, MO., U. S. A.

BERG BRICK PRESS

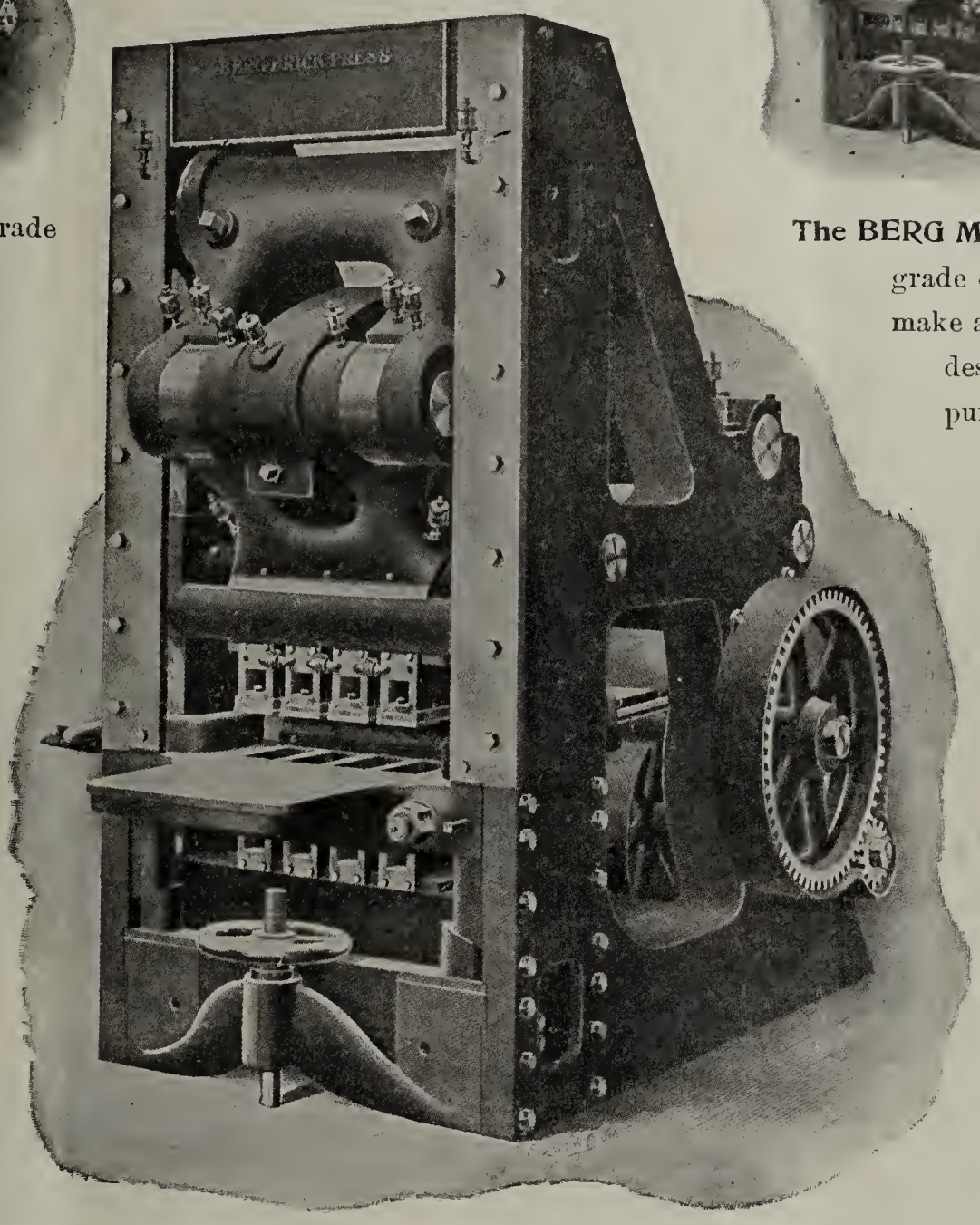
The highest development of the Art of Brickmaking Machinery so pronounced by the United States Government.

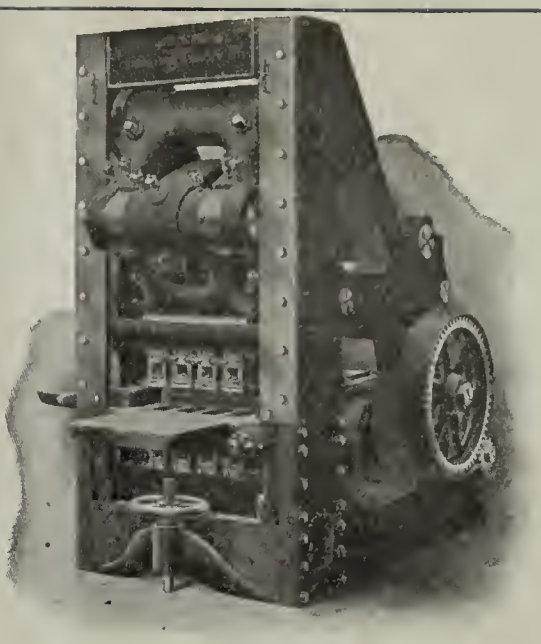


The BERG for the highest grade of pressed brick of shale or clay. It makes all kinds of shapes and sizes of brick. Changes from one shape to another can be made in less than an hour's time.

First-Class Workmanship. Cut Gearing. Fully Warranted.

The BERG makes the best sand-lime brick and cheapest because it is the strongest machine and gives the highest pressure. Thirty-five sand-lime plants in United States use the **BERG** Brick Press SUCCESSFULLY.





The BERG MAKES the highest grade of fire brick. Can make all kinds of shapes desired for fire-brick purposes.

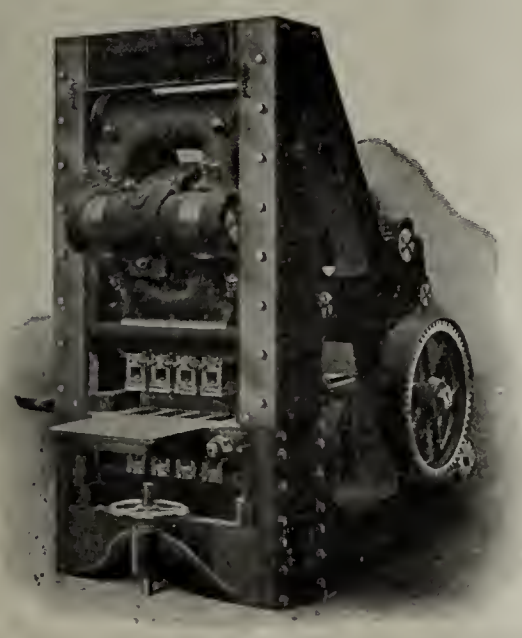
Three distinct pressures make the brick evenly pressed all through. No granulated centers of the brick.

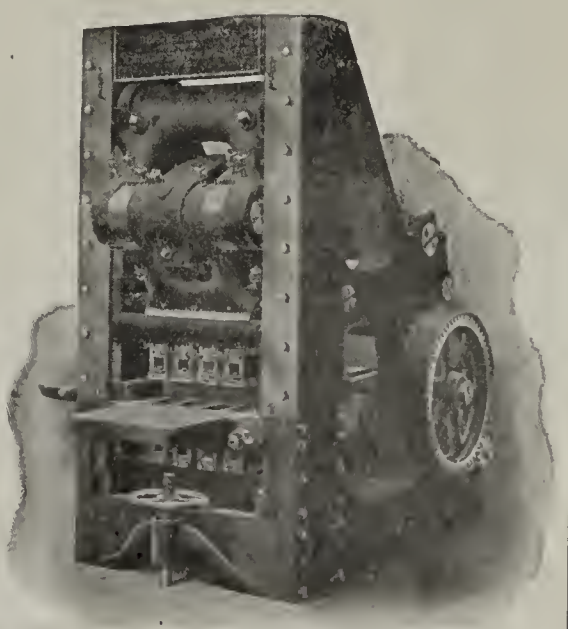
The BERG is the best for sand and cement because of its strong pressure. Uses less cement, makes cheaper brick.

The 1905 Berg Press

Many other steps further forward in improvement and highest grade of material and workmanship, also cut gearing. Fully guaranteed as to its success. Manufactured by its inventor in Toronto, Canada, at the Bertram Engine Works Co. Plans and specifications on the different kinds of plants furnished, also all equipments.

For prices and full particulars, address





A. BERG

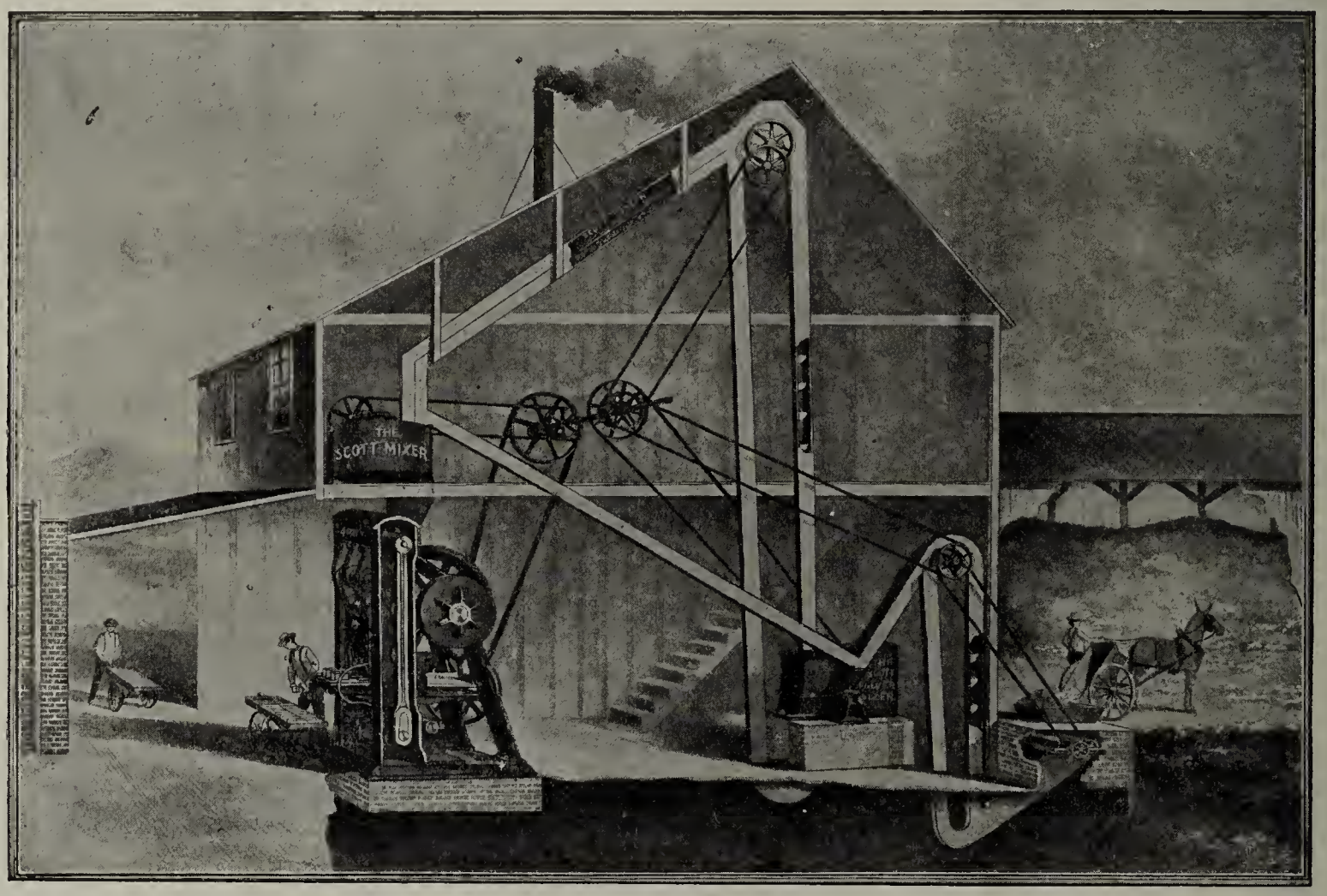
THE BERTRAM ENGINE WORKS

Toronto, Ontario, Canada

Rojestvensky

certainly was unfortunate, for while he had the knowledge of tactics within himself he was not backed up with the necessary *equipment, enthusiasm, organization.*

In waging our war against competition we claim that in our campaign we know that our facilities for manufacture are the very best; our organization is practically complete, and our enthusiasm—well, you can't imagine how strong that is unless you are operating an Andrus Press.

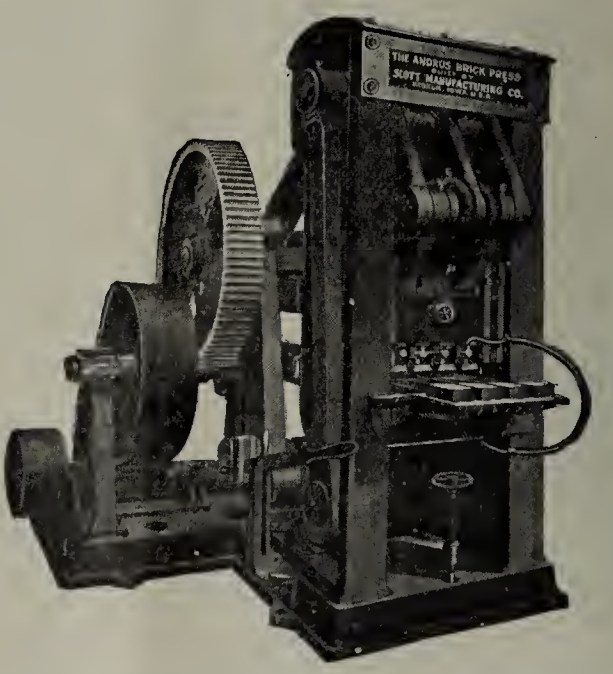


THE SCOTT NOISELESS PLANT.

We Install Complete Plants

Our Drafting Department Is At Your Service.

We cordially invite the brickmaker and capitalist to come to our city and see our presses in operation in the "St. Louis District," which is conceded to be the greatest Dry Press center in the world.



THIS IS THE PRESS THAT SCOTT BUILDS.

SCOTT MANUFACTURING CO.,

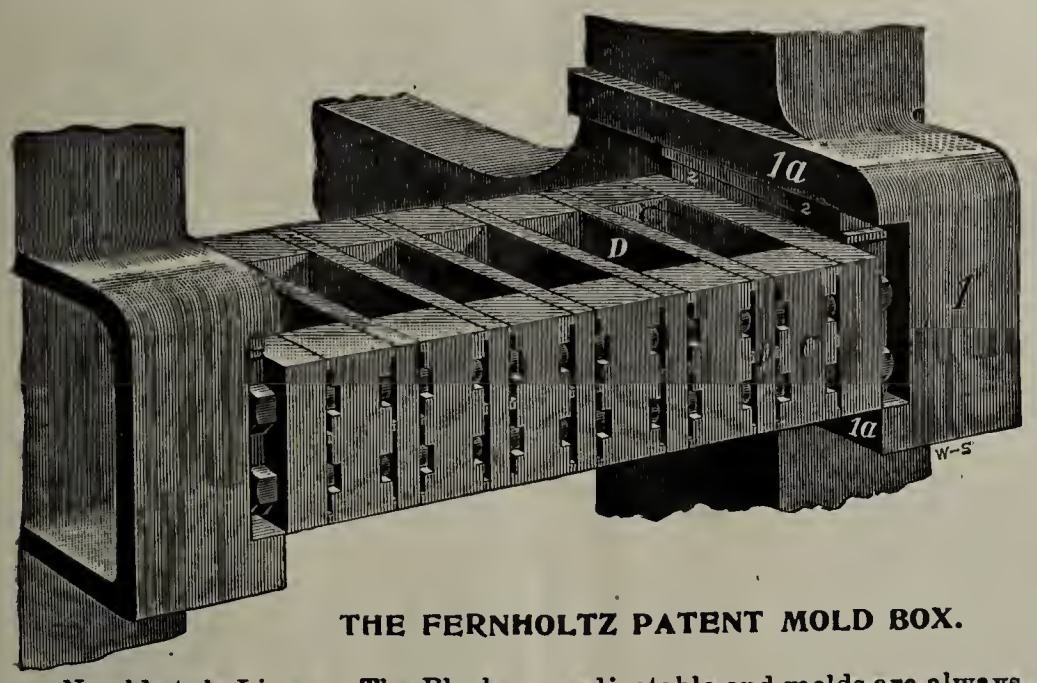
Commonwealth Trust Building, Saint Louis, Missouri.

The Fernholtz Brick Machinery Co.

Manufacturers of

The Celebrated Fernholtz Dry Press

Four mold Press 20,000 daily capacity. Six mold Press 30,000 daily capacity

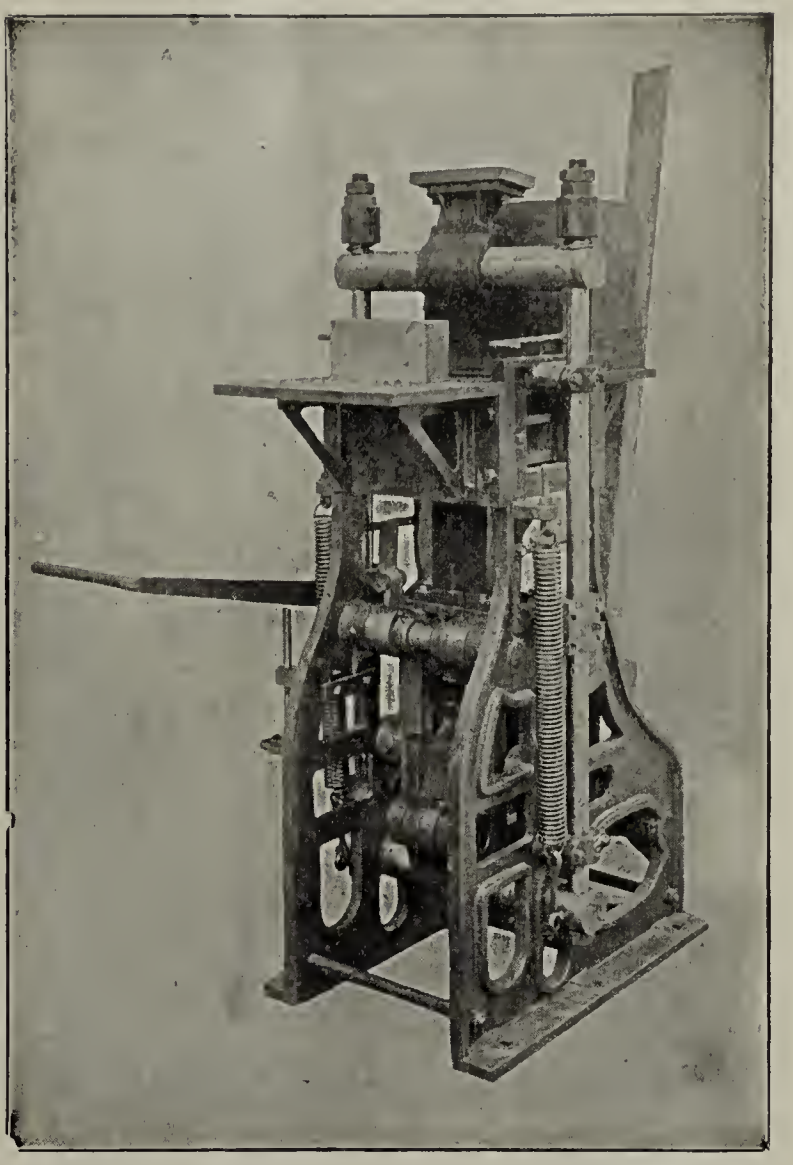


THE FERNHOLTZ PATENT MOLD BOX.

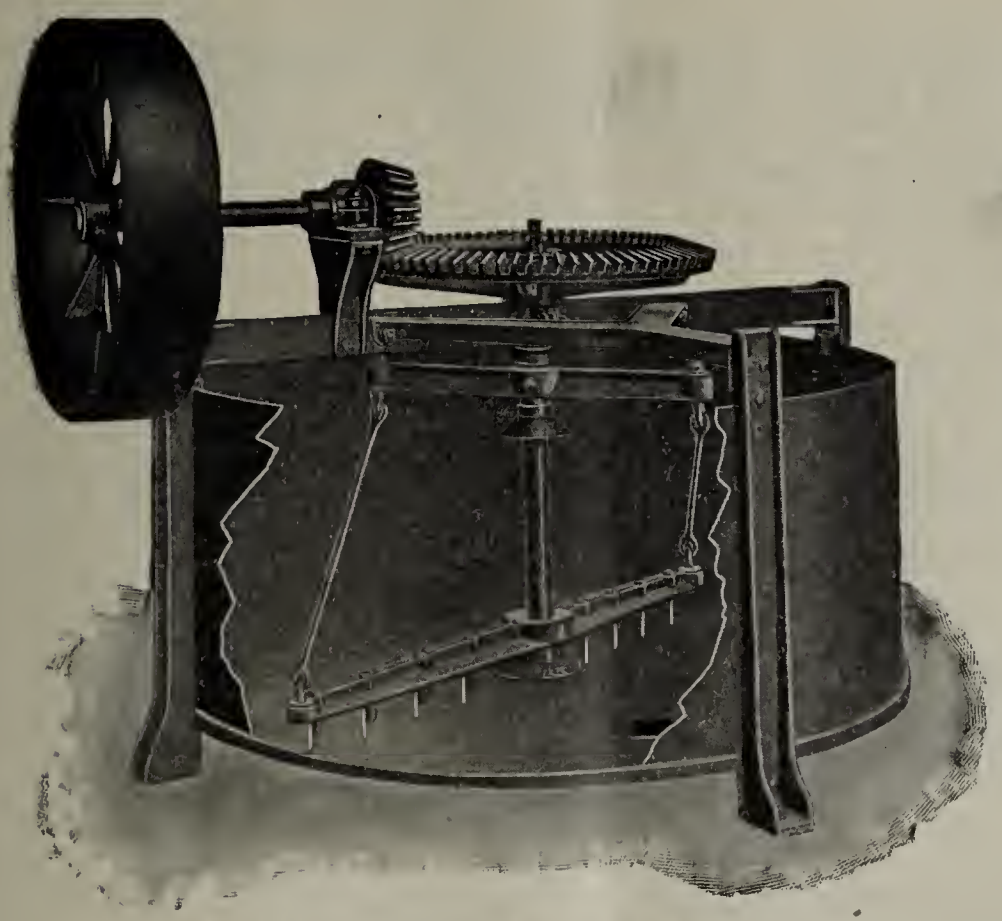
No old style Liners. The Blocks are adjustable and molds are always one size. We have put them in most all makes of Dry Press machines. Easily and quickly adjusted. They are made entirely out of chilled iron, the hardest known metal.

GRATH PATENT HAND POWER PRESS.

Especially adapted for ornamental designs. Any size brick up to 12⅝ inches long, 10 inches wide and 4¼ inches thick.
Brick set into kiln direct from press.



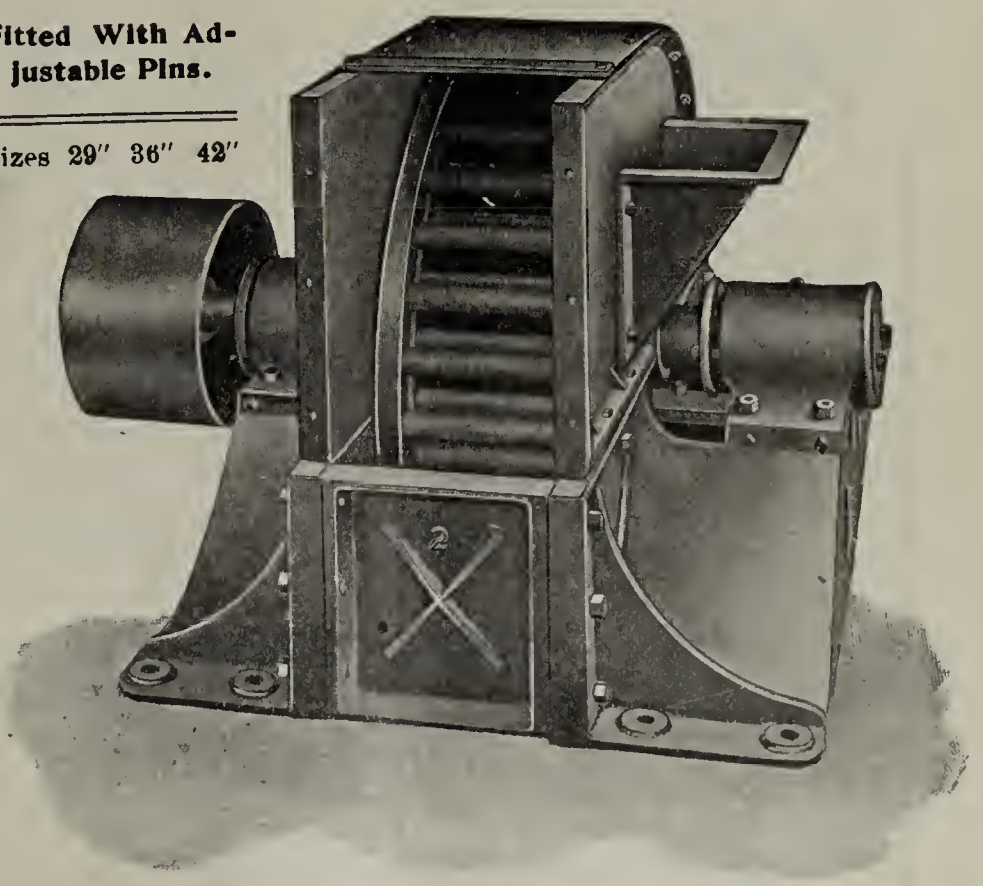
GRATH PATENT HAND POWER PRESS.



A GOOD MIXER IS ALWAYS APPRECIATED.

Fitted With Adjustable Pins.

Sizes 29″ 36″ 42″



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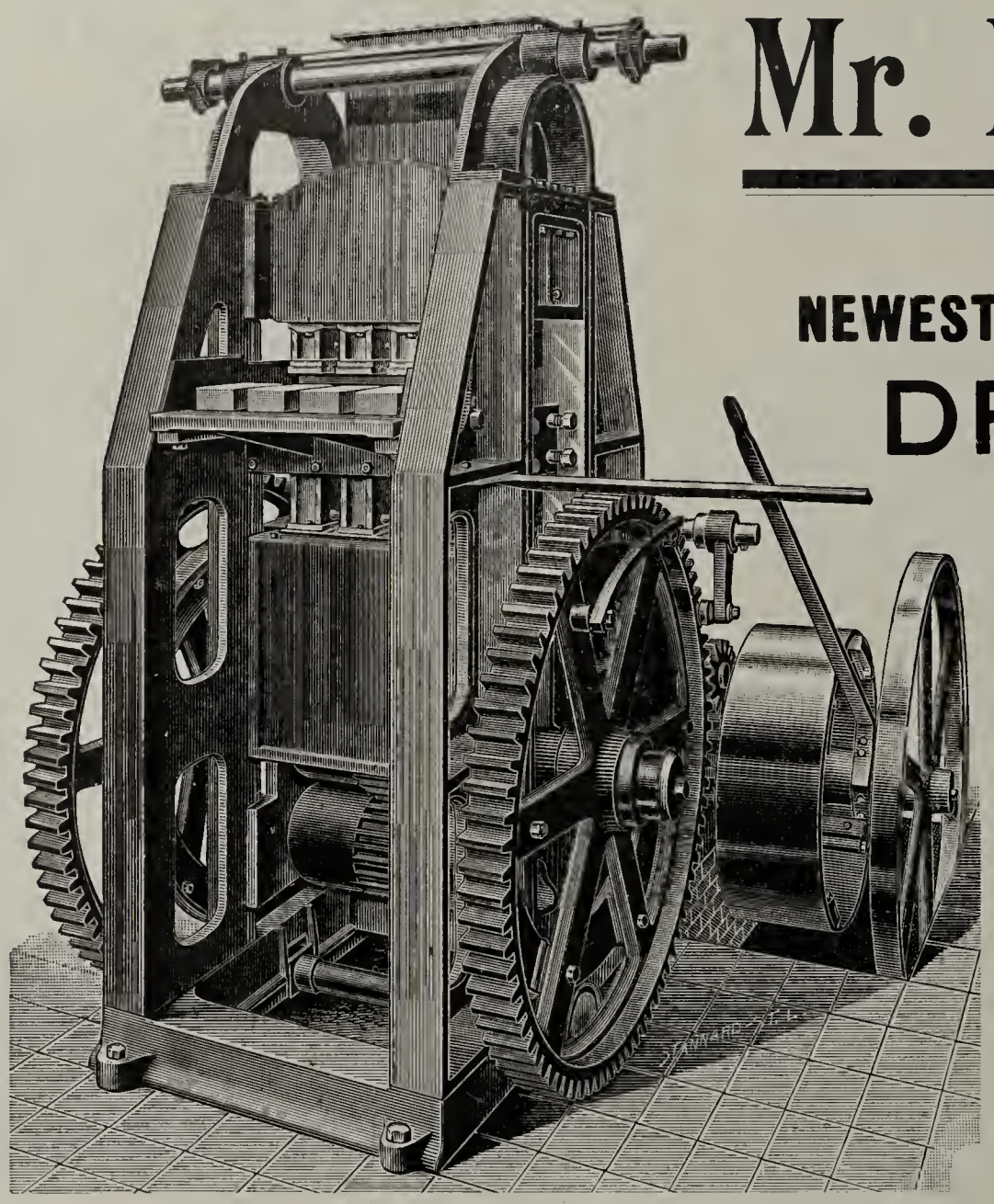

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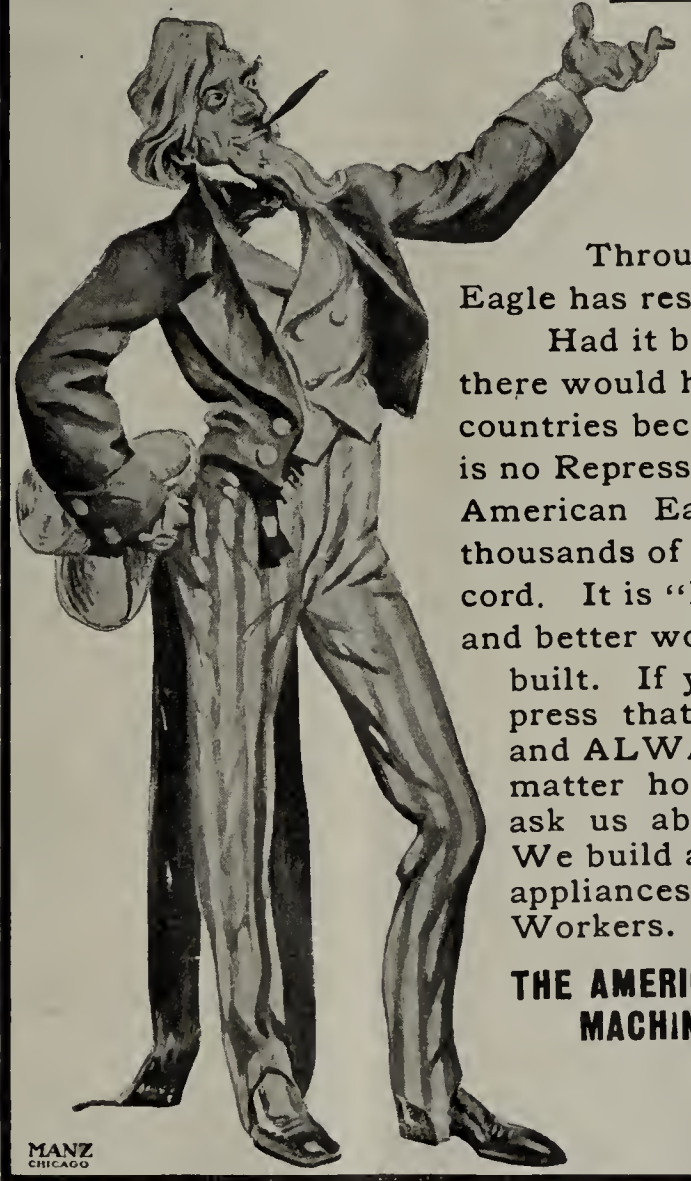

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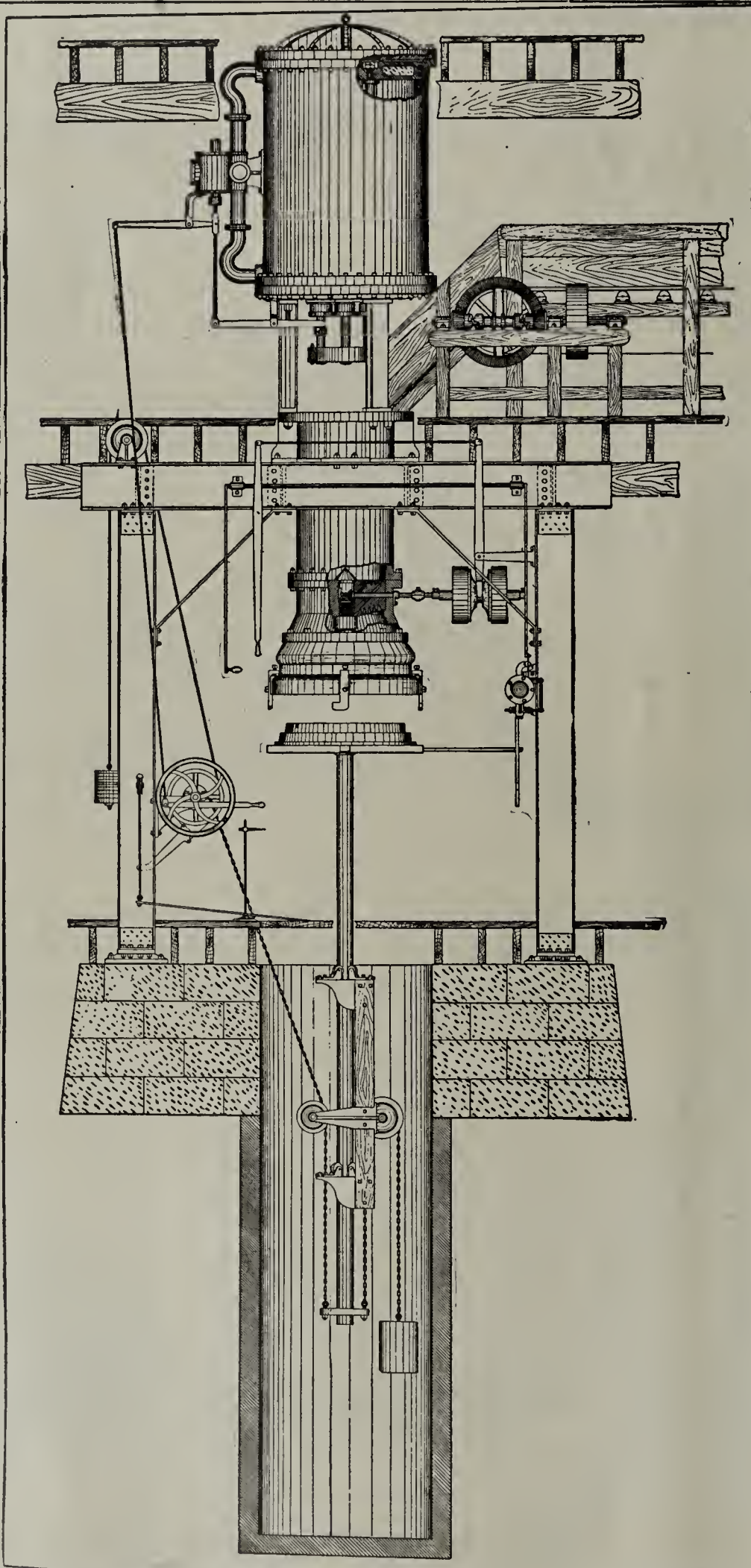

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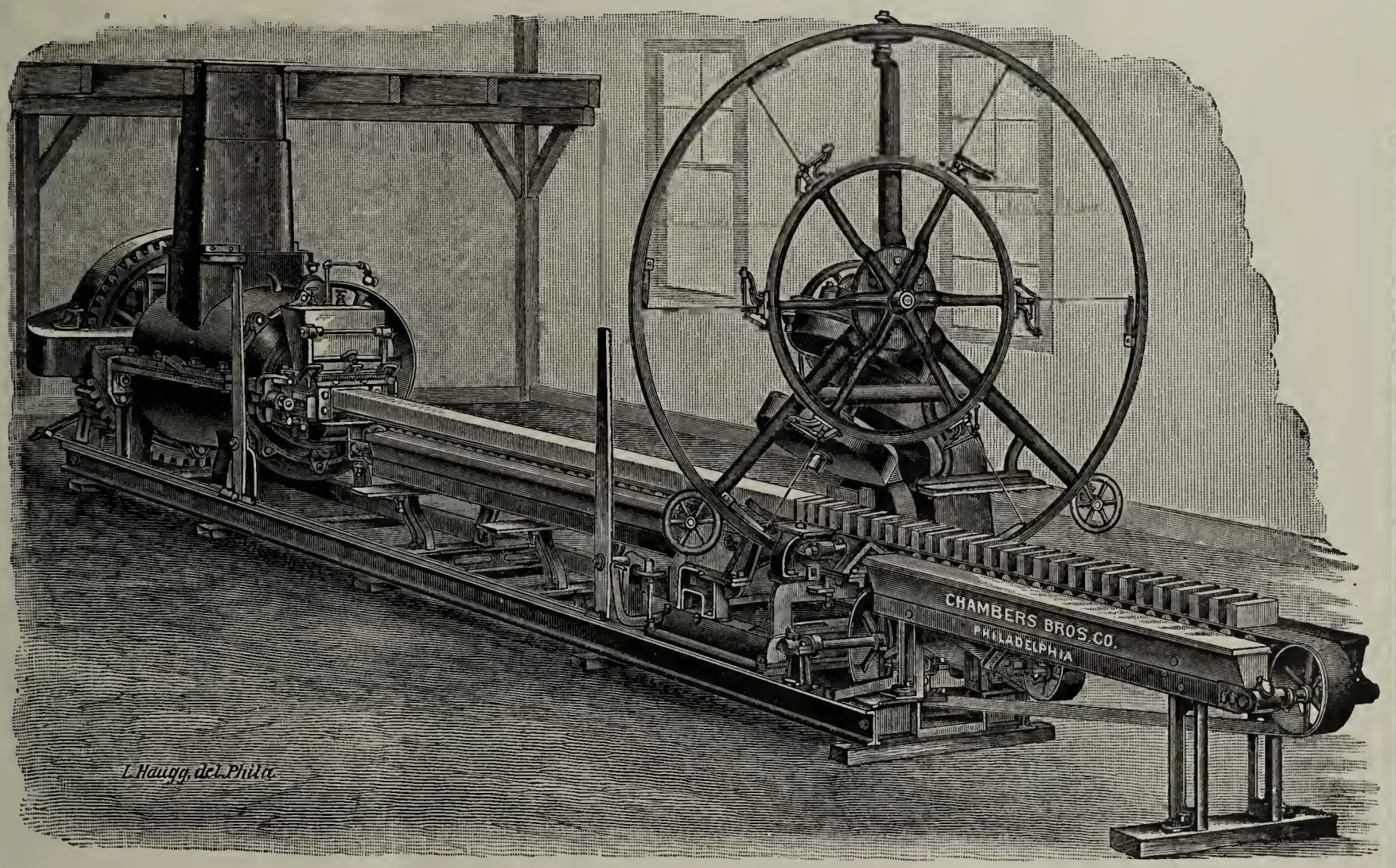

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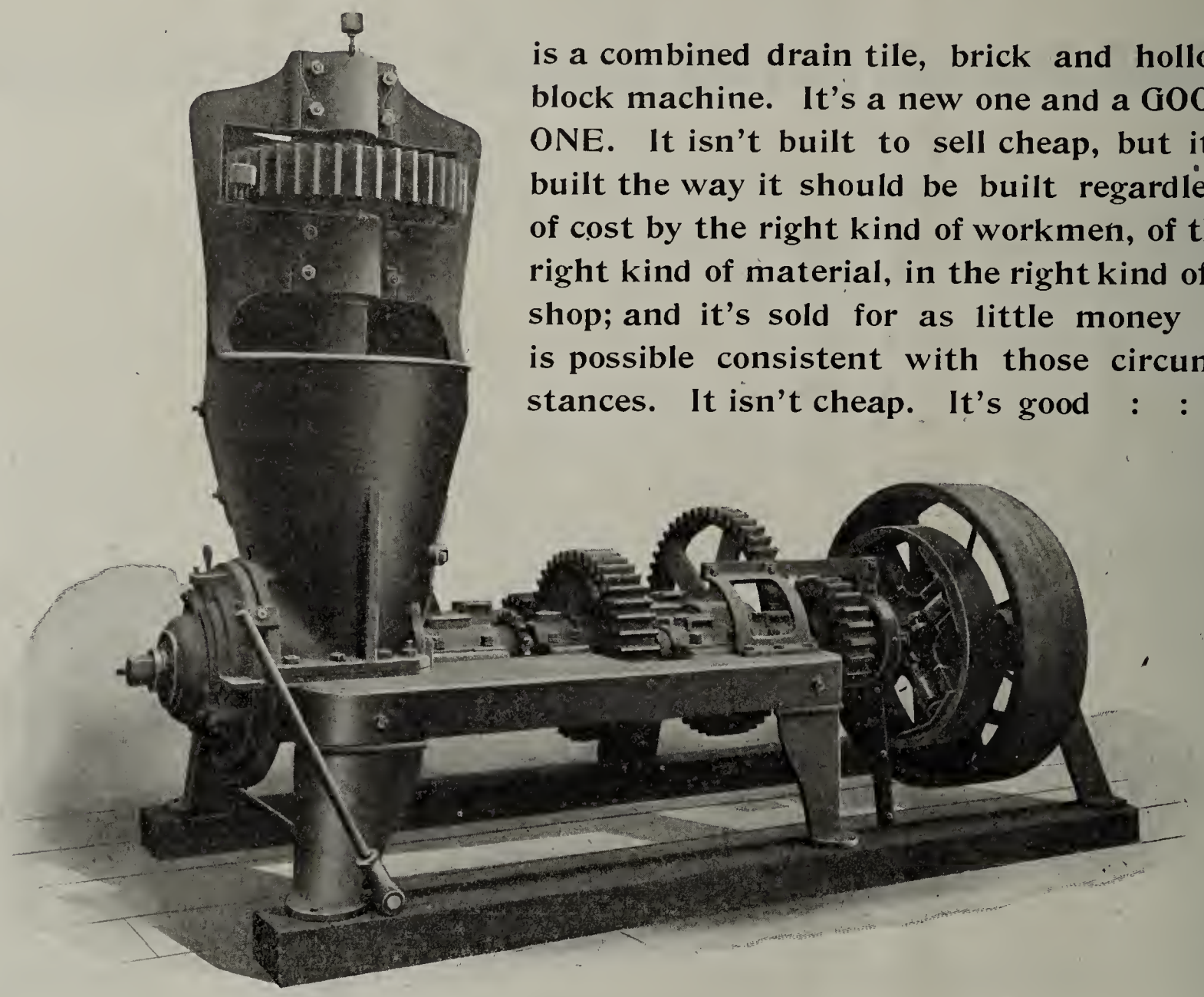

is a combined drain tile, brick and hollow block machine. It's a new one and a GOOD ONE. It isn't built to sell cheap, but it's built the way it should be built regardless of cost by the right kind of workmen, of the right kind of material, in the right kind of a shop; and it's sold for as little money as is possible consistent with those circumstances. It isn't cheap. It's good : : :

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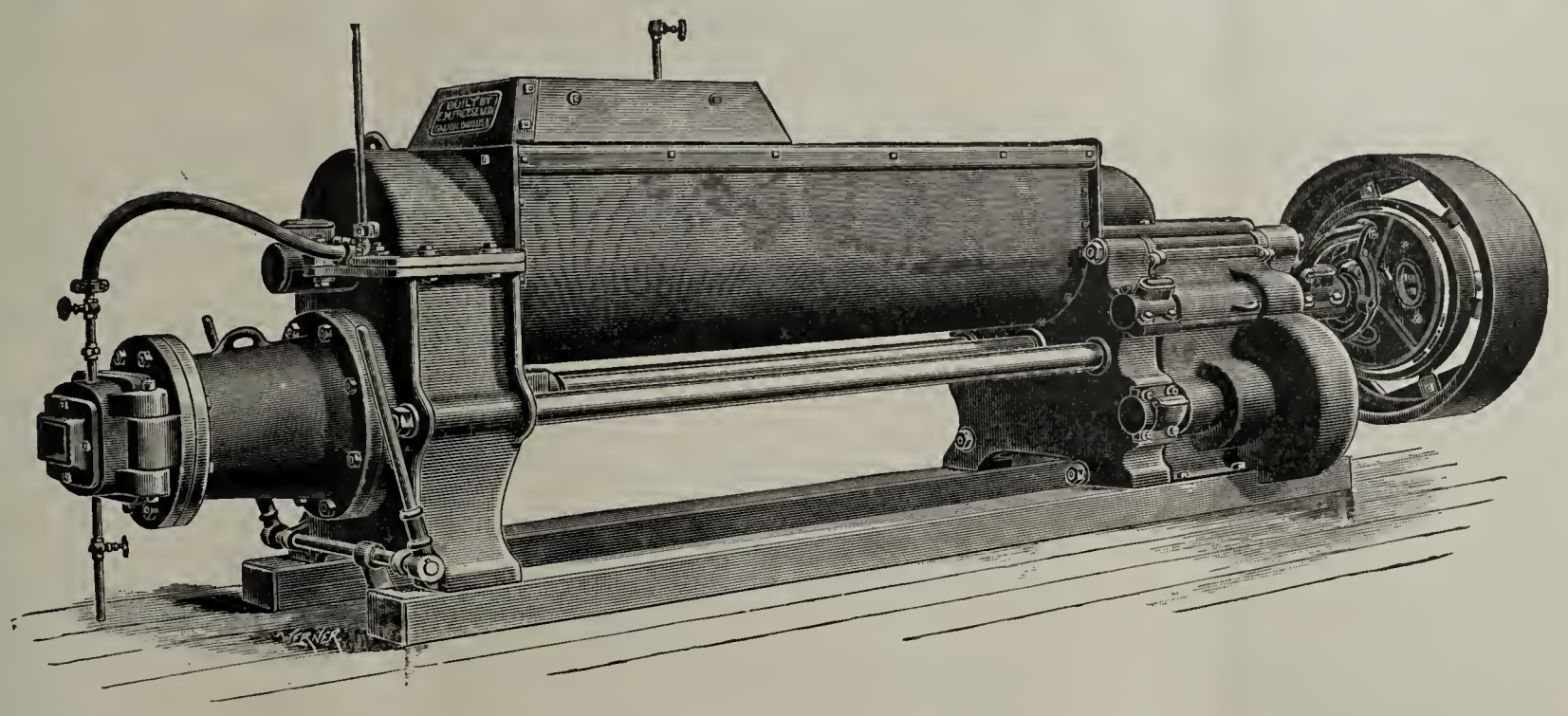

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Several hundred are in everyday use. They do first-class work and are convenient, economical and durable. This can be verified by investigation.

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We are now selling our brick as fast as we can deliver them.

Pardon me for taking your time, and with SUCCESS to the WONDER, I am,

Yours very truly,

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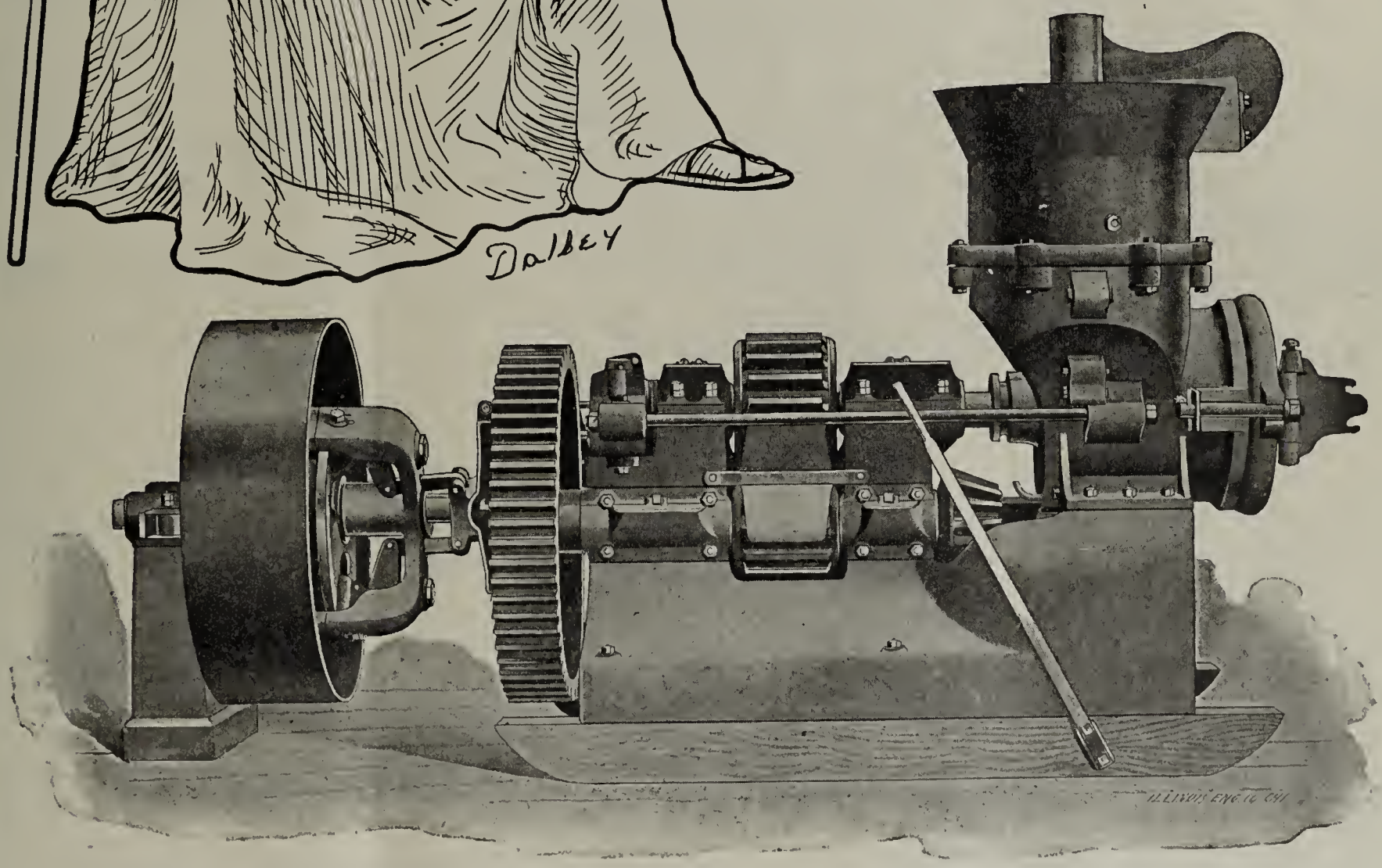

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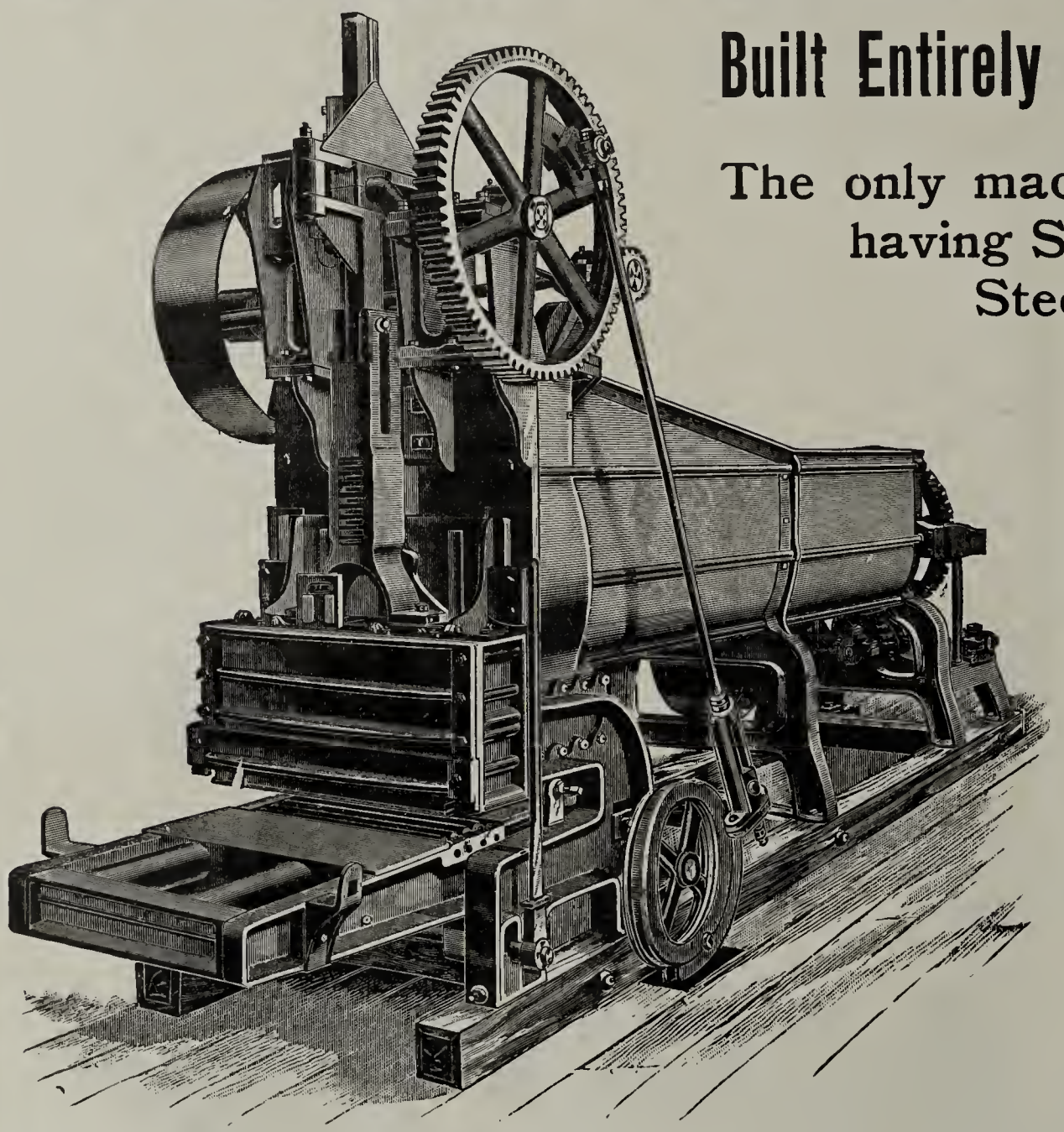

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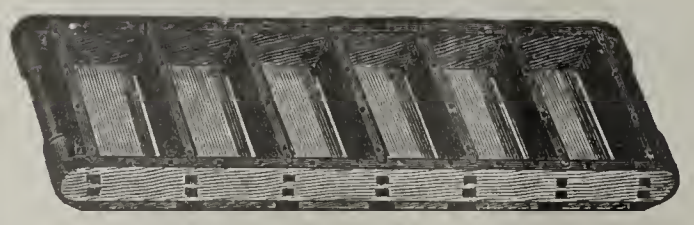

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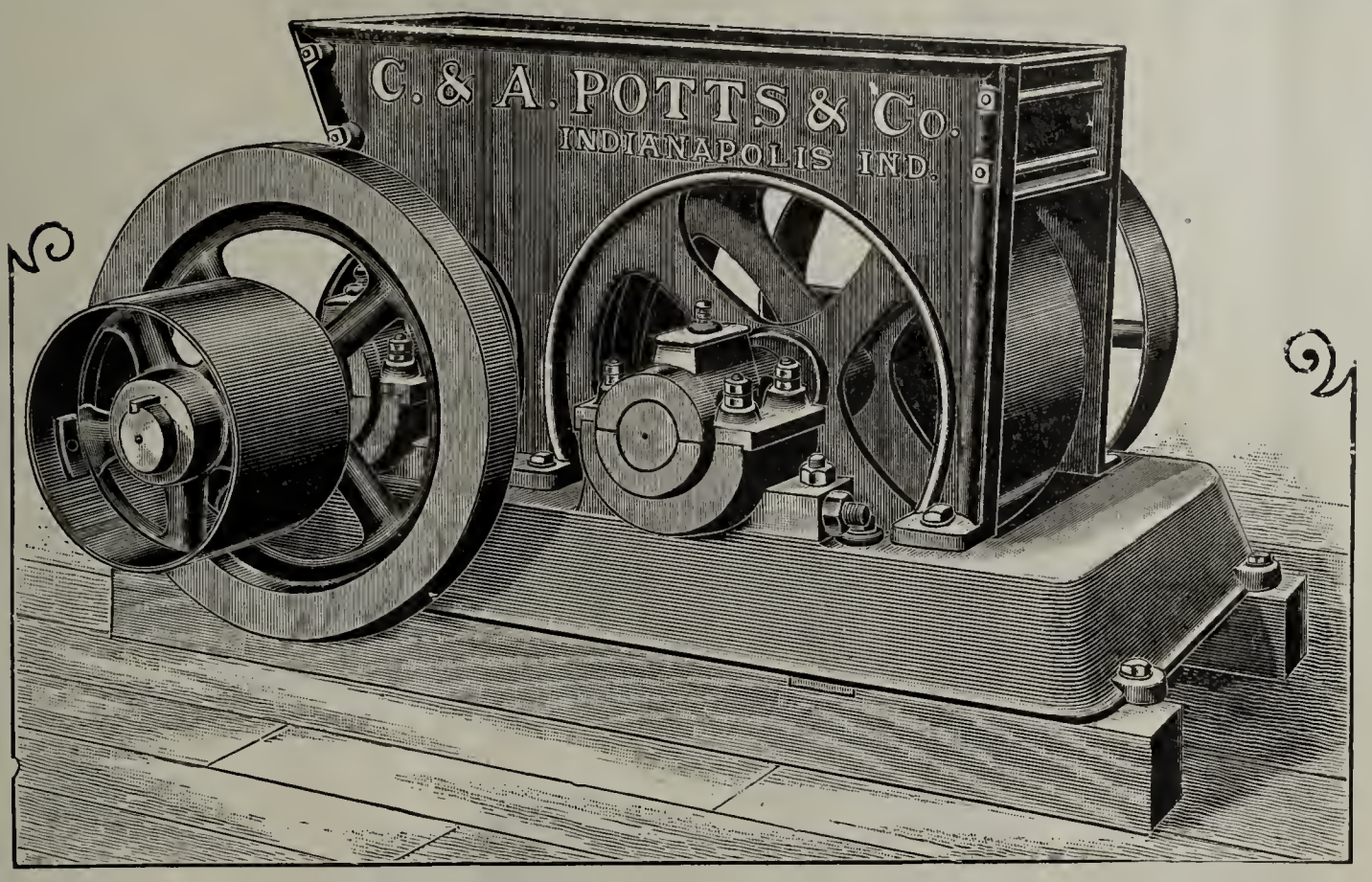

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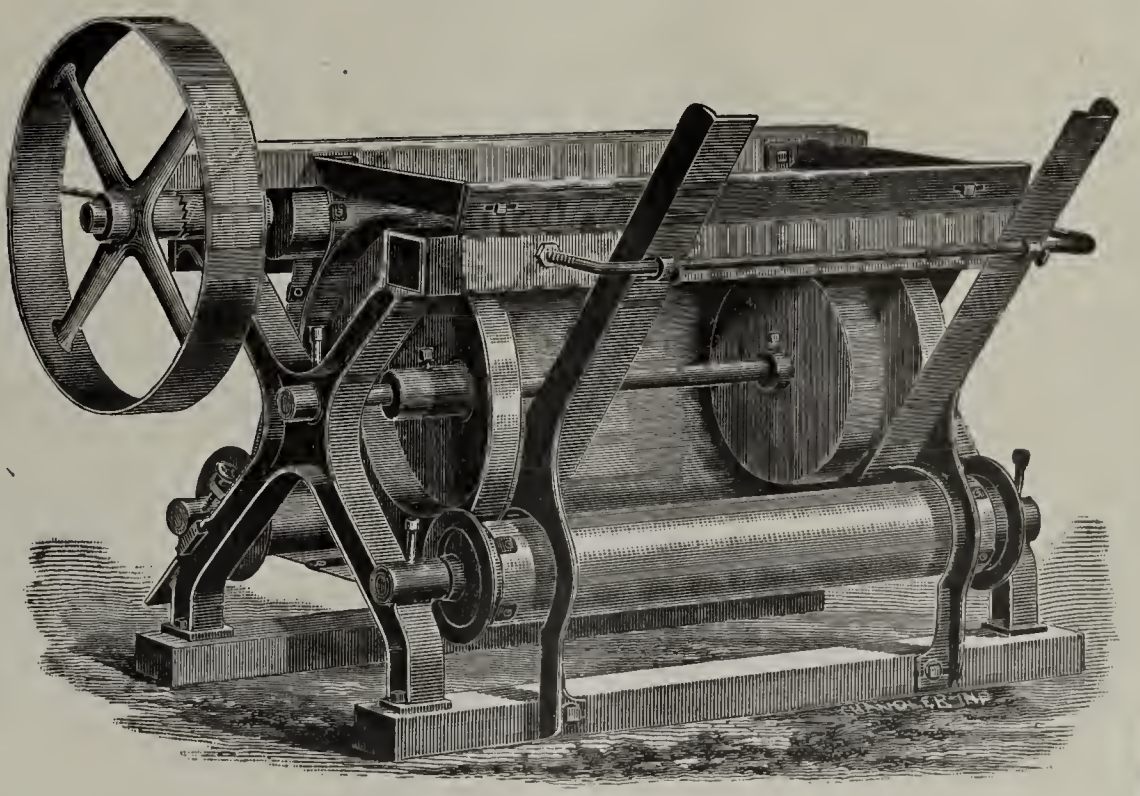

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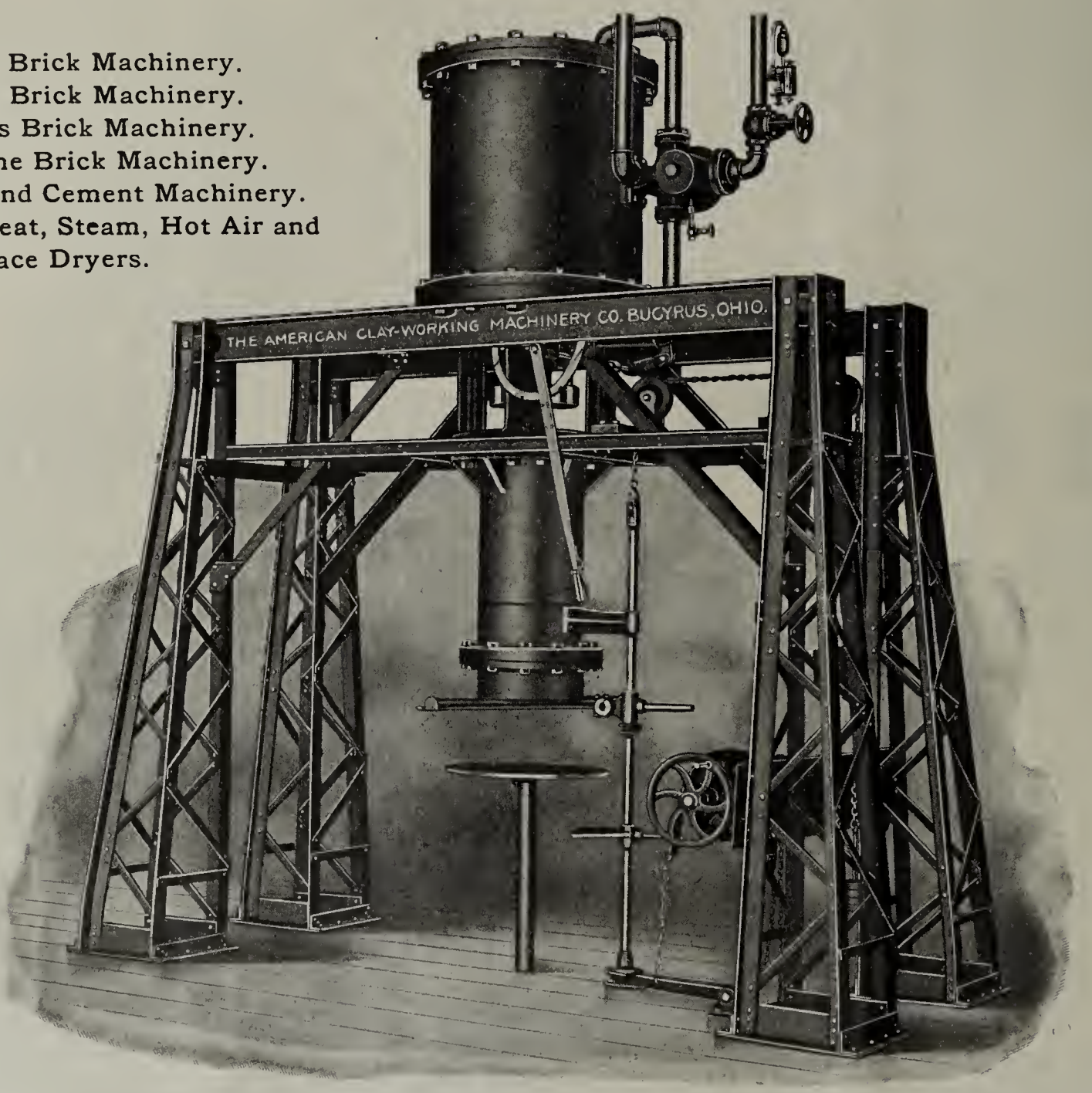

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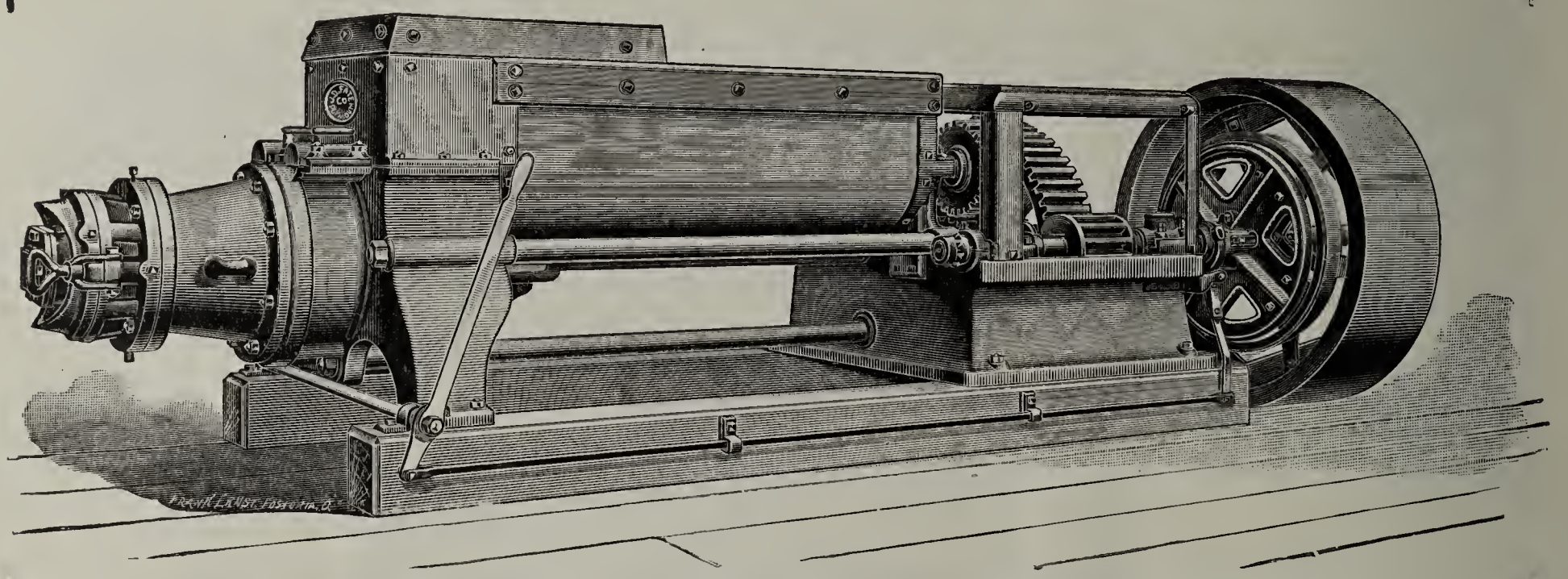

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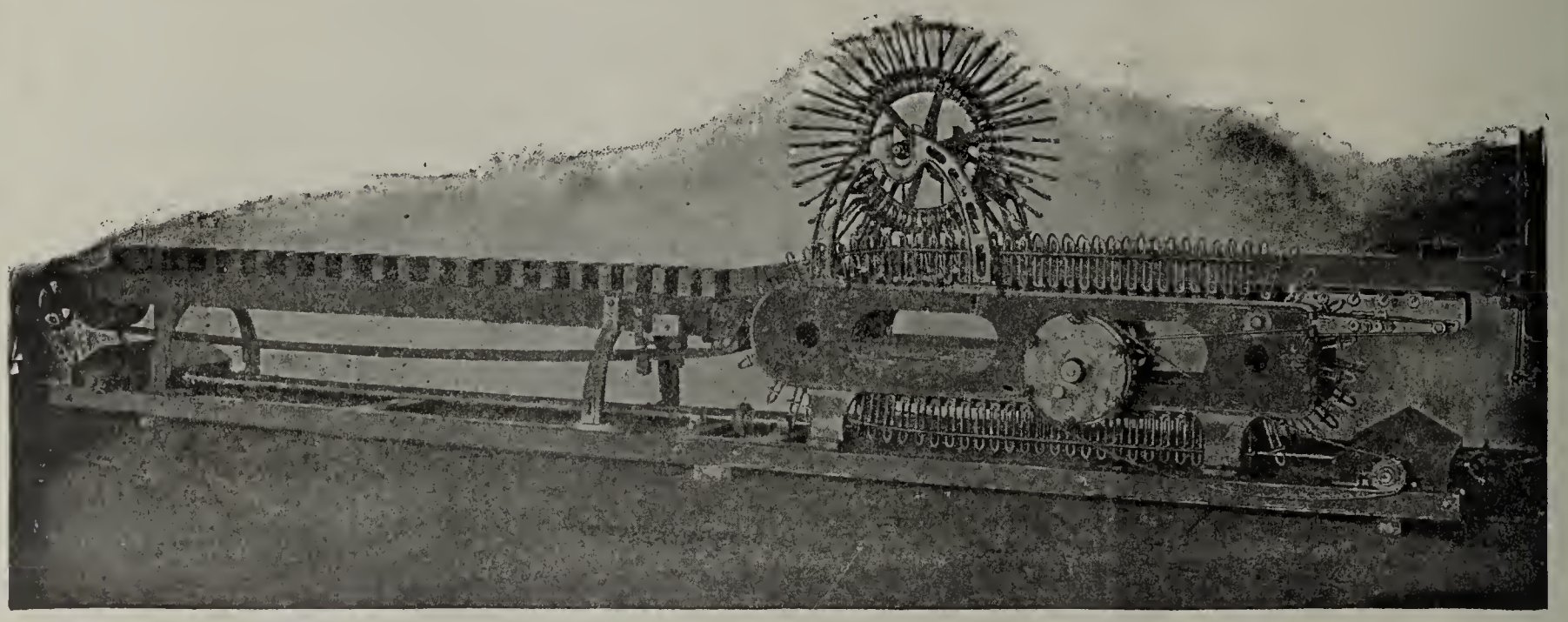

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CLAY RECORD

Vol. XXVII. No. 7. CHICAGO, OCTOBER 16, 1905. Semi-Monthly, $1.00 per Year Single Copies, - 10 Cents

USES AND TESTS OF LIME AND HYDRATED LIME.

Address to the National Lime Manufacturers' Association
By E. W. Lazell, Ph. D.

At the request of your president I have undertaken the preparation of this paper with a view of presenting to your association, in concise form, data relative to "Lime and Its Uses." I have not atempted to go into the subject in a purely scientific form, but rather to so present the facts that they may suggest to you possible improvements and economy in the process of manufacture; also ways of extending the use of lime and lime products. Further, I have endeavored to make clear to you the necessity for technical investigations of the methods of manufacture, and the advantages of having tests made of the product in order not only to give standards by which the product may be judged, but to further the uses of the same.

The lime industry in this country is one of the oldest and one to which we owe much of our advancement. It is often the case that a basic industry, like the burning of lime, and one which is so broadly scattered, is overlooked and not assigned to its proper place. A more recent industry, whose development had been more spectacular, steps before us, and, owing to the nearness of our time, shuts out the older, underlying industry.

Lime in its numerous forms enters into the manufacture, either directly or indirectly, of most of the materials with which we come in contact daily. Our dwellings and buildings are held together with lime mortar and rendered habitable with lime plaster. Without lime the great iron and steel industry would not be possible, since it is lime that forms the slag that allows the iron to be reduced. Thus the great railroads, ships, bridges and the large office buildings are only possible because of the extended use of lime. This introduction, which could be indefinitely prolonged, gives you an idea of the basic character of the industry, and further shows it to be one on which many other great industries rely. Therefore any advancement in the manufacture and uses of lime would lead to further advancement in the other industries depending on it.

Starting with the foundation of the lime industry, we will classify for the purpose of this paper the raw materials, or limestone, into two great classes:

First, those that, when burned, give products which slack when treated with water.

Second, those that, when burned, give sintered products which do not slack..

The first class contains all the products that can be directly classified as lime, in the sense of this article, and will be the only ones considered here. This class is further subdivisible as follows:

First, fat limes or pure limes, consisting practically of calcium carbonate.

Second, the magnesia or dolomitic, containing magnesium carbonate and calcium carbonate.

Third, the hydraulic limes, or those that possess the property of setting under water.

Hydrated Lime.

It has been the custom in the past, and continues in the present time, to bring the lime into commerce chiefly in the form of lump lime. During the past five years, however, some manufacturers have begun to hydrate their lime and to offer it to the trade in the form of a dry, flourlike powder.

It is in order, at this place, to consider what hydrated lime is. Chemically speaking, it is lime plus water; that is, calcium oxide (CaO) plus water (H_2O). Fifty-six parts of calcium (CaO) unite with 18 parts of water (H_2O), giving 74 parts of calcium hydrate $Ca(OH_2)$, or dry hydrated lime. These figures naturally apply only to the chemically pure material, and they show that one part of lime takes up about one-third of its weight in water in the process of dry slacking. During this chemical combination heat is developed, and hence in hydrating the lime the same must either be confined so that the steam generated will not escape or an excess of water must be added. This product has much to recommend it, and is a direct advance in the di-

rection of carrying the manufacture as far as possible before offering the material for sale.

There is no doubt that a good hydrated lime is the equal of lump lime, and there is no question but that a prejudice exists against this material. A distinction must be carefully drawn between the half-limes, or those which have been allowed to slack under the influence of the atmosphere, and the manufactured hydrated lime. The advantage of hydrated lime can be summed up as follows:

Since it exists as a delicate white powder and comes into commerce in sacks, it is more easy to handle and can be more accurately handled and measured than the lump product. The method of handling this material resembles that of cement, and it requires no ageing after being mixed with water.

Further, it does not deteriorate rapidly, and can be stored for a long time in any dry place without undergoing material changes, thus doing away with the loss of lime due to spoiling and the danger of fire from the quicklime coming in contact with water.

The condition in which this lime is allows the impurities to be easily recognized and tests to be readily made. Hydrated lime can be as readily tested as cement, thus placing in the hands of the user the means of determining the character of the material.

To the manufacturer it offers the advantage of allowing him to use all of his burned product, the fine lime as well as the lump line, and reduces his waste simply to pieces of unburned lime too small to be reburned and to the ashes of the fuel.

In the process of hydration care should be taken that sufficient time is given for the complete absorption of water in order that all the lumps may be slacked, and thus do away with the danger of unslacked particles. To overcome this it is advisable to sieve the product either by means of bolting cloths or by air separation. The particles removed in this way consist of three kinds: Unburned particles of limestone, unslacked particles of pure lime and particles which have not slacked owing to their high silica contents.

We will study the use of hydrated lime in detail other than its use in mortar.

Probably the first and greatest use of this material is in the sand-lime brick industry.

Second, its use as a hard wall plaster, either mixed with Portland cement or gypsum products.

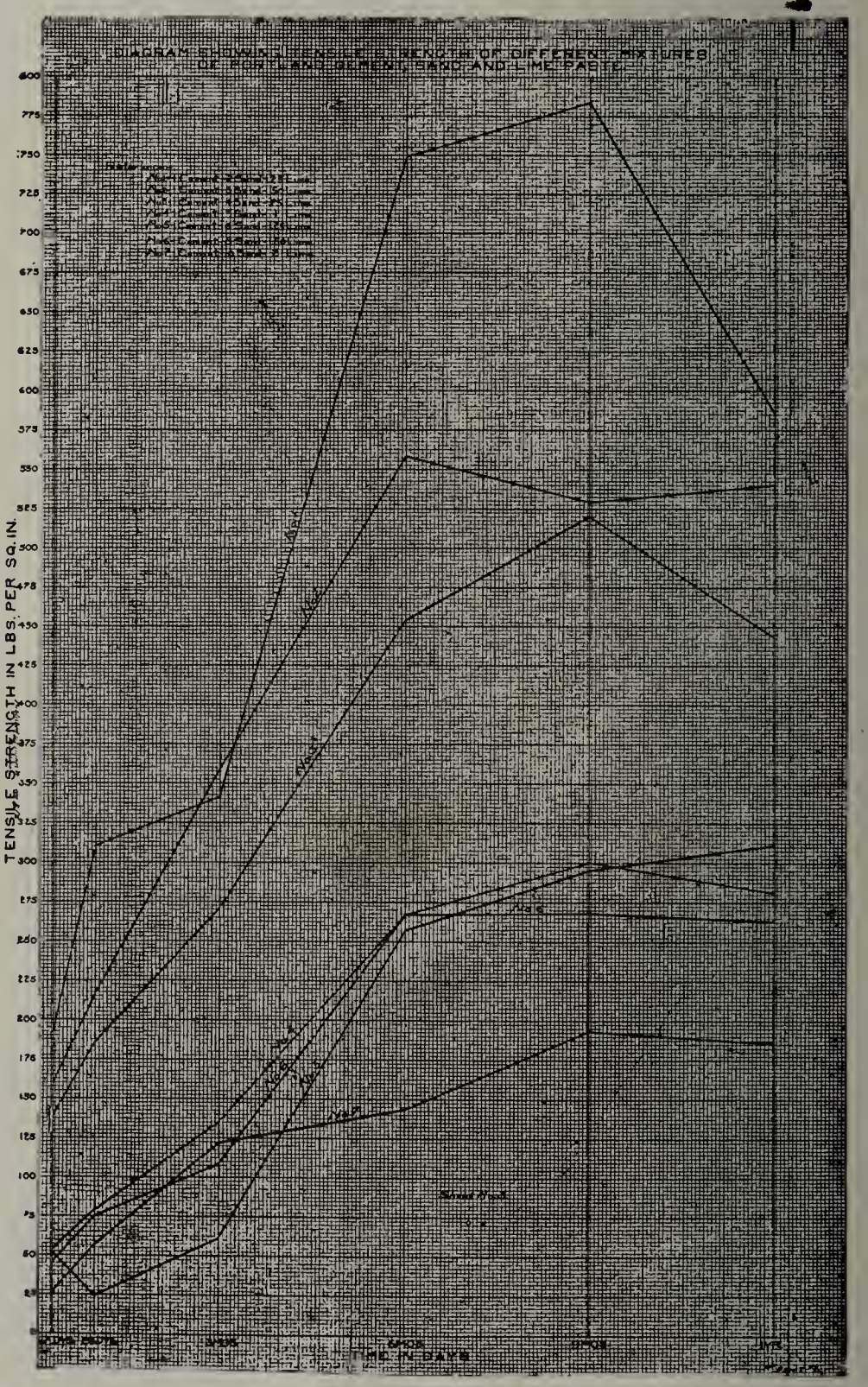
Third, its use as an addition to Portland-cement mortars.

Fourth, its use in the manufacture of slag cement.

Fifth, its use in rendering more dense and waterproof concrete.

Sand-Lime Brick.

This industry, at first developed in Germany, was not long in being permanently established on this side of the water. Its foundation was due to the investigation of Dr. Michaelis of Berlin, by which he hardened sand-lime brick with steam under pressure. The chemical reaction supposed to take place in this hardening is the combination of the hydrated lime directly with the sand to form an insoluble lime silicate, which furnishes the binding material for the brick. With the expiration of Dr. Michaelis' patent rights a few years ago it became possible to develop the industry on this side of the water, and at the present time we are seeing sand-lime brick factories spring up in all sections of the country. This material, however, has not won the confidence of the people, and can be brought about only by establishing standards and by rigid testing and inspection of the materials. The German manufacturers have taken the initiative in this, and have established standard specifications for this material. It appears to the writer that the sand-lime brick industry offers a great field for the use of hydrated lime, and one which your association should endeavor to develop.



With those of us who have come in contact with the sand-lime brick there can remain no doubt but that this material offers all the advantages possessed by the clay brick, together with a more sightly appearance and a greater architectural adaptation. In physical characteristics it resembles the very best grade of sandstone, and from the few tests already published it would appear to be superior in regard to strength and density to the red or building brick of the trade.

Bricks are being successfully made both from the hy-

drated fat limes and the hydrated magnesia limes, but so far the better success appears to have attended the use of fat limes. Mr. S. V. Peppel claims that doubling the amount of dolomitic lime increases the strength about 50 per cent., but this would seem to place the cost of manufacture of the dolomite sand-lime brick too high to be economical.

Before leaving the study of this material and its preparation we must not overlook the harmful effect that carbon dioxide (CO_2) has in the manufacture of the sand-lime brick. The best results are only obtained when the method of manufacture is such as to produce a maximum amount of the hydrosilicate, and this can only be accomplished in an atmosphere practically free from carbon dioxide (CO_2).

The Use of Hydrated Lime in Hard Wall Plaster.

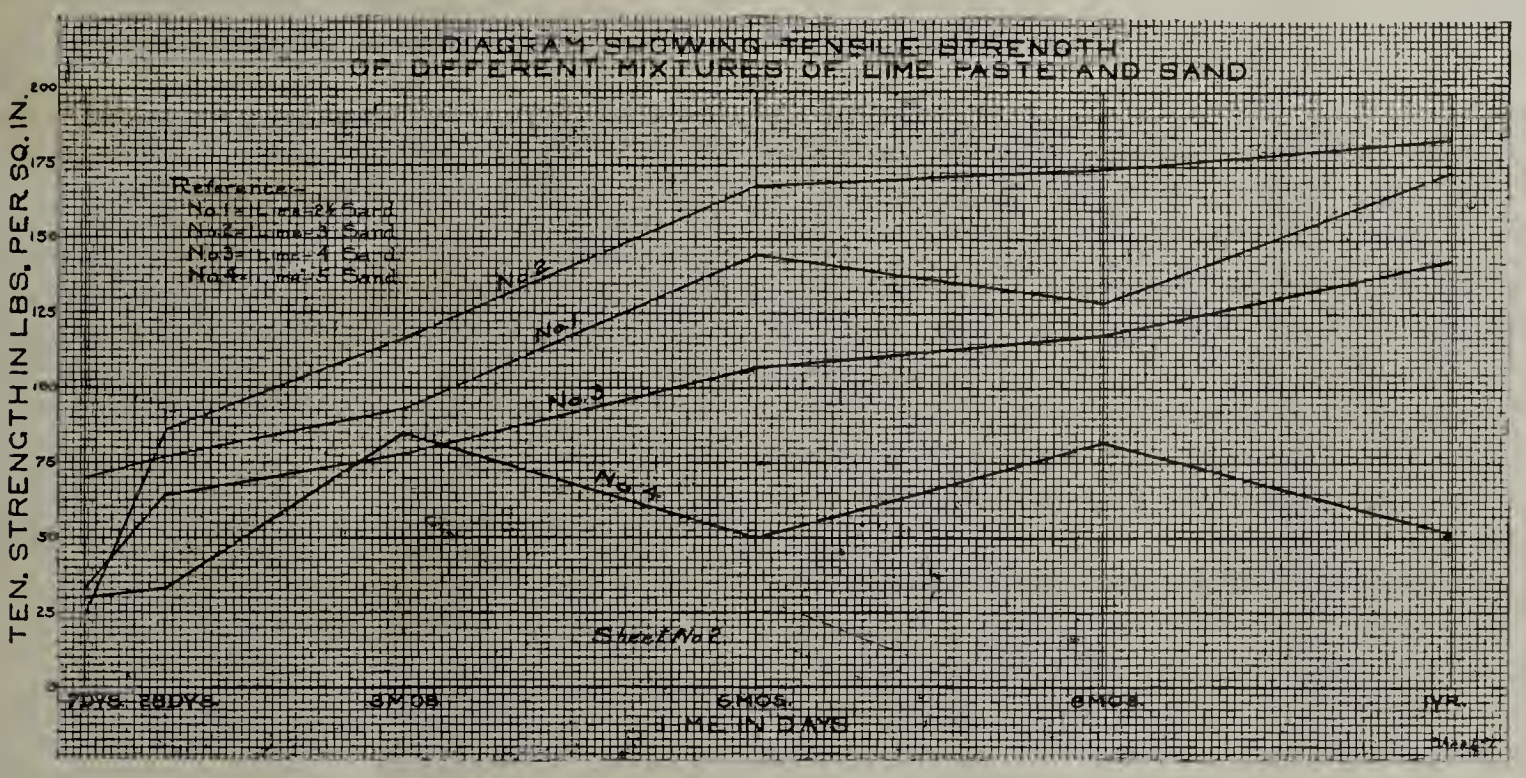
It has recently been found out that a superior grade of wall plaster can be manufactured, using as a chief ingredient hydrated lime. The development of this industry, however, has been carefully concealed, and but little data can be given on the subject. It would appear to be one well worthy of investigation by your association, as it is perfectly feasible to make a dense and smooth wall plaster whose base would be chiefly hydrated lime. Owing to the perfect hydration of the material and the ease with which it can be handled, it should be possible to give a more beautiful finish than any other class of material. Also a proper study of the mixtures to be used should develop a plaster whose set can be accurately predicted and one which would work well either in moist or dry weather. An advantage of such a plaster would be that it would not set as quickly as the high gypsum product, and, further, it would work much more smoothly under the trowel, thus allowing a more uniform and dense surface to be obtained.

Hyrdated Lime with Portland Cement Mortars.

It has been the custom in the past to add lime putty to mixtures of natural cement and sand in order to make the same work smooth under the trowel. The bricklayers objecting to the cement mortar because of the difficulty of handling same with the trowel, the use of the comparatively small proportion of hydrated lime with Portland-cement mortars gives to it this characteristic of working smoothly under the trowel, and bricklayers have found that this small addition increases the number of bricks that can be laid per man. That such additions are not detrimental can be seen by referring to the tests given at the end of this article.

Slag Cement.

It has been long known that by mixing certain materials with slacked lime an hydraulic mixture is obtained which is nearly equal of Portland cement. This fact was well known to the ancients, especially the Romans, who used for the mortar in the construction of their large buildings a mixture of slacked lime and volcanic ash. Many of these buildings are standing to this day in a good state of preservation, and they are a monument to the stability of lime products.



Tests of Mixtures of Lime Paste and Sand.

Following in the footsteps of the Romans a slag-cement industry has been developed in this country. This slag cement is nothing but a mixture of dry hydrated lime with granulated ground blast-furnace slag.

Hydrated Lime and Concrete.

A practical method of rendering concrete impervious to water has long been sought for. It is well known to you all that no such practical method is at present known, and we have to resort to the covering of concrete with waterproof materials, such as tars and asphalts. From experiments recently carried through it has been shown that by the judicious mixing of dry hydrated lime with the concrete aggregate a much denser and more waterproof material is formed. This is readily explained when we remember the large amount of water with which lime will combine to form a thick plastic mass. This paste will be formed in the outer layers of the concrete, and would retard and hinder the penetration of water into the mass.

Hydrated lime mixed with Portland cement is coming into extensive use for producing waterproof concrete work. In foundations, cellars and external walls the use of this form of lime is particularly desirable. The addition of 10

to 25 parts of hydrated lime to every 100 parts of Portland cement will produce a much denser artificial stone than Portland cement alone is capable of producing.

The German manufacturer of artificial stone prepares his hydrated lime a year in advance by the following method: Several large pits are dug, the lime is slacked and reduced to a fine paste and run into pits at their own works; the unslacked particles settle to the bottom, leaving a pure, clean paste above. When this paste is a year old it is considered to be fit for use in the manufacture of artificial stone.

The cement and sand are first mixed, the hydrated lime paste added, and the three ingredients mixed in a concrete mixture directly before molding into the forms. In this manner an artificial stone having superior waterproof qualities is produced. This suggests to you a further use of lime.

Ground Quicklime.

This form of bringing lime into the trade is simply a grinding of the lump lime as it comes from the kiln, and the products possesses some advantages; among others, it is rendered particularly fitted for use as a fertilizer. This preparation, although apparently simple, it only being necessary to install some form of grinding machine, such as ball mills, is in reality not as easy as it appears at first sight. Since the dust renders the operation of grinding difficult and unhealthful and necessitates the installation of some form of dust-collecting machinery, thus increasing the cost of the installation.

In foreign countries this lime is often advantageously used in place of lump for the preparation of mortar and possesses the advantages that it is more easily and thoroughly slacked than the original lump lime. Further, it does not require as extensive ageing. Some users consider it to be superior to the hydrated form of lime, since it is thought by them that if sand is mixed with reasonably hot lime the strength of the resulting mortar is increased.

The great objection to this lime is that it cannot be stored easily and that it takes up moisture from the atmosphere and bursts the sack in which it is retained. The later objection may, however, prove an advantage, since the user can be sure that he is obtaining a fresh product. Also, if the sacks are not completely filled, room is allowed for some considerable expansion of the lime.

Tests of Different Mixtures.

First, lime paste and sand.
Second, lime paste, cement and sand.
Third, hydrated lime, cement and sand.

Before closing this article I wish to call your attention to results of tests made, collected from various sources, both of lime paste and sand, which may prove interesting to you. Part of these tests were made in the laboratories of the Henry S. Packman Engineering Co. and have not been published.

Tests of Mixtures of Lime Paste and Sand.

Diagram No. 1 gives a graphical reproduction of the tensile strength of briquettes, having one square inch section of different mixtures of lime paste and sand. The sand used in these tests was an artificial sand prepared by mixing different grades of crushed quartz in such proportion that it contains exactly 35 per cent of voids. The time covered by these tests is one year, and the briquettes, after being exposed two weeks to the air in the laboratory, were placed out of doors, where they were subjected to all atmospheric changes. In order that the briquettes might be broken in uniform condition they were brought into the laboratory two weeks before breaking, in order that they might gradually assume the temperature of the laboratory.

The curve marked No. 1 represents the tensile strength of a mixture of one part lime paste to two and one-half parts sand.

Curve No. 2 represents the tensile strength of a mixture of one part lime paste to three parts sand. You will notice that the tensile strength of No. 2 exceeds that of No. 1, and this is accounted for by the fact that the proportions of this mixture are such that the voids are practically filled by the lime paste.

Curve No. 3 represents the tensile strength of a mixture of one part lime paste and four parts sand.

Curve No. 4 represents the tensile strength of a mixture of one part lime paste and five parts sand. In this latter case you will notice that the line is irregular and shows a falling off at different periods in tensile strength, which is probably caused by their being insufficient lime paste to fill the voids and to give ag ood bond; the mixture is too poor for tensile tests. In all cases the briquettes were similar in shape to those used in testing cement, and the lime paste was slacked some months before it was used, in order that the hydration might be complete. The lime used in these tests, as well as the following, was a high calcium lime of very good quality.

Tests of mixture of lime paste, Portland cement and sand are shown in the diagram following:

Diagram No. 2 gives the tensile strength of different mixtures of Portland cement, sand and lime paste. This test was undertaken in order to prove if lime paste was detrimental to Portland cement and sand mixtures, since it is often added to make the mortar work smooth under the trowel.

Curve No. 1 gives the tensile strength of a mixture of one part Portland cement, two parts sand and one-fourth part lime paste.

Curve No. 2 gives tensile strength of a mixture of one part Portland cement, three parts sand and one-half part lime paste.

Curve No. 3 gives the tensile strength of a mixture of one part Portland cement, four parts sand and three-fourths part lime paste; and one part Portland cement, three parts sand and one-half part lime paste, did not have the same strength as the same mixture with the Portland cement with sand, without lime paste. In this case, however, of a mixture of one part Portland cement, four parts sand and three-fourths part lime paste, the strength exceeds that of the same mixture without lime. This can be explained by the fact that in the first two cases there was more than enough cement to fill the voids of the sand, and the lime would naturally act as a weakener, while in the third case there is not enough cement to fill the voids in the sand, and the lime fills these voids and acts as a strengthener in the mixture.

Curve No. 4 is a mixture of one part Portland cement, five parts sand and one part lime paste.

Curve No. 5 is a mixture of one part Portland cement, six parts sand and one and one-fourth parts lime.

Curve No. 6 is a mixture of one part Portland cement, eight parts sand and one and one-half parts lime paste.

Curve No. 7 is a mixture of one part Portland cement, ten parts sand and two parts lime paste. The latter curves in each case show an increase in strength over that given by the same mixtures of Portland cement and sand without the lime paste.

DUBUQUE LEADS IOWA TOWNS IN PAVEMENTS AND DEBTS.

It is rather an interesting fact that Dubuque leads all of the cities of the state in the extent of its pavements and debts.

Of the former it has 82.25 miles—all brick—and of the latter it has $1,211,396.

These are the figures according to the census department at the capitol. Dr. Patterson of the department has been compiling some interesting information relative to the municipal governments of the state, and these figures came out in the tests that were applied.

As to pavement and debt, Des Moines is the nearest neighbor to Dubuque. It has 71.83 miles of the former, including 9.50 miles of asphalt pavement. It has a debt of $718,000, which is but slightly more than twice the debt of either Cedar Rapids or Council Bluffs.

According to the reports compiled by the census department, thirty-six towns and cities in Iowa have paved streets, but this does not include a score or more of others which have macadamized streets.

The returns from the thirty-six towns compiled show that there are 325.93 miles of paved streets, including those paved with brick and asphalt. There is an occasional cobblestone or granite boulder pavement for a few blocks, as at Council Bluffs. but for the most part the pavement is of brick or asphalt.

Of the former, there are 290.55 miles, and of the asphalt 35 38 miles in the thirty-six towns and cities referred to. As stated, Dubuque leads, and Des Moines is a close second.

Estimating the cost of brick paving at about $40,000 per mile and of asphalt at $47,000 to $50,000 per mile, it is seen that about $12,000,000 has been expended in these thirty-six towns for pavement.

The following table compiled from the census bureau reports shows the number of miles of brick and asphalt pavement on the streets of the cities mentioned:

	Brick.	Asphalt.
Adel	.25	.....
Albia	2.00	.....
Burlington	15.37	.....
Cedar Falls	1.70	.....
Cedar Rapids	16.00	3.00
Chariton	.75	.....
Chatsworth	.....	.04
Cherokee	.80	.....
Clinton	10.00	.....
Council Bluffs	14.66	.....
Creston	2.00	.....
Davenport	30.50	.80
Des Moines	62.33	9.50
Dubuque	82.25	.....
Ellsworth	.04	.....
Fairfield	1.50	.....
Fort Dodge	4.50	7.00
Fort Madison	1.90	.....
Indianola	.....	.33
Keokuk	3.50	.....
Knowlton	.04	.....
Manchester	.60	.....
Le Mars	1.00	.....
Marion	.....	.80
Marshalltown	8.00	4.00
Mason City	1.00	1.00
Muscatine	12.16	.....
Newton	.33	.....
Ottumwa	9.25	.75
Red Oak	2.00	.....
Shenandoah	.60	.....
Sioux City	3.66	4.50
Tipton	.55	.16
Washington	1.00	.....
Waterloo	5.66	3.50
Waverly	.65	.....
Total	290.55	35.38

THE PURPOSE OF THE NATIONAL SAND-LIME BRICK CONVENTION AT DETROIT.

There seems to be some question in the minds of those interested in Sand-lime Brick, as to what is to be the purpose of the convention to be held in Detroit. Some think that it is to be an advertising medium for system and machinery men. Others, that it is to be a lovefeast, a place to cash dividends of the past year. While some imagine that it will be an exchange for hard-luck stories. I may say that it will probably combine all of these features, although the primary object of the convention is an educational one in every sense of the word. In compiling the programme for the convention, the officers of the association have endeavored to select such subjects as are of vital importance to the future welfare of Sand-lime Bricks and to those who are manufacturing them. In selecting writers for papers on the varoius subjects, the association has endeavored to select such men as it had at its command, those most conversant with the subject to be treated. The idea is not that the papers will give us something new and startling, but that they will create a discussion and bring out from the manufacturers, not theories, but actual practical experience. In many cases, manufacturers of machinery have been requested to write papers, not for the purpose of advertising their machinery, but because we have felt that they are more competent to bring forth the cardinal merits of the machine, and, as we all know the machinery men are very fluent talkers, and are very convincing in their arguments, we take it for granted that they are equally good writers. As we have endeavored to give all the machinery men, interested in Sand-lime Brick, an opportunity to express themselves, we do not feel that our method can be construed into one which would be advertising any system or any one particular machine.

Much progress has been made in the past year in the development of Sand-Lime Brick Plants and in the improvement of machinery, as well as in the method of manufacture. Much information is expected and we feel that by a frank interchange of thought and experience, we shall all be benefited. It is to the interest of the manufacturers of Sand-Lime Brick, that the makers of machinery shall receive the benefit of the manufacturers' experiences as well as they. The life of Sand-Lime Brick is wholly dependent upon the progress and improvement of the machinery.

One of the principal features of the meeting will be the reading of papers. the subjects of which are based on careful experiments made during the year by several of the leading scientists in the country.

Lest anyone has been omitted in receiving a special invitation to the convention to be held December 5, 6 and 7 at the Hotel Cadillac, Detroit, Mich., we wish, herewith, to extend a hearty welcome to all those who are interested in Sand-Lime Brick, whether they be members of the association or not.

H. O. DUERR, Secretary.

Wilmington, Del., Oct. 5, 1905.

LAMINATION OF CLAYS AND A REMEDY.

(By Geo. T. Durant, Kingsthorne Brickworks, England.)

To a certain extent it is a matter of personal opinion as to the greater utility of a vertical to a horizontal type of pug-mill. Taking the average light loamy clays of Surrey, and many top deposits existing in all parts of the country, nothing better has been devised, up to the present, than the "Murray" type of vertical pug-mill and expression rolls.

For dealing satisfactorily with a heavier class of clay—say of the blue Oxford boulder variety, found in enormous quantities all along the Nene and many other river valleys, expression rollers, to avoid lamination, are most essential, but a much heavier geared type of machine is necessary, with, preferably, two pairs of top grinding rolls. For such a process a horizontal worm, or auger machine, has several advantages over the vertical type, the top rolls, and usually the hauling gear, being combined and self-contained upon one cast iron bed plate, and there is much less in power transmission.

In several instances, where excessive lamination has occurred, a pair of expression rollers at the end of the pug-mill has worked wonders, and the power required to drive, with the worm taken away, has been fully 25 per cent, on an output of 15,000 a day, less than has been required working with a worm.

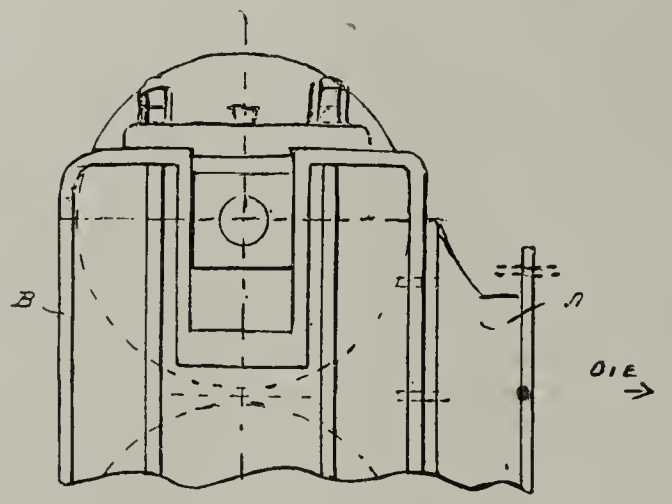


FIG 1

Imperfect getting of the clay, too, is often a factor in the cause, and I have found, after twelve years' study of the subject, that a clay well gotten through the winter is a brick half made in a summer yard, and will prove of superior qualtily to the hastily-made production the machine makers extensively advertise as coming "direct from the bank."

I can offer you interesting particulars of the working in two plastic brickyards that I am well acquainted with.

No. 1 yard makes a first-class common red from a blue boulder clay, worked to about 50 feet, and when burnt being absolutely free from lamination. The face of clay is fully 200 yards long, and falls freely after frost. Getting does not exceed ninepence or a shilling per 1,000, and from March to October, a twelve-horsepower portable engine makes an average of 24,000 per day with an old horizontal pug-mill, carrying two pairs of top rolls two feet long, with a pair of express rolls twenty-four by eighteen inches.

Now this is a very old-established (and some will think old-fashioned) yard, but burning its bricks in a continuous kiln and putting them on rail at 18 per 1,000 at the present time.

No. 2 yard is ten miles from No. 1, and works practically an identical stratum. There are some seventy tons of "up-to-date" (*sic*) machinery, including a forty-horsepower horizontal engine, the output averages 15,000 per day, and there are either five or six men in the clay hole; 23 has to be obtained for an inferior brick, that can never be cut with any degree of accuracy, owing to the core or lamination. The machine towers in a special building some sixty feet high, with the top two pairs of rolls mounted on massive timber baulks running crossways through the building. Under them is a mixer, and lastly a pair of finishing rolls feeding a horizontal worm machine.

At another yard, with a similar plant, I have known the crank to be twisted off the forty-horsepower engine.

No drawings are really necessary for my simple recommendation, and no lengthening of the mouthpiece, or cutting the clot by a bar across the front, is so effective or generally satisfactory as are the rolls.

My experience, however, has taught me to improve upon the usual standard pattern made by brickworks engineers, the most important alteration being always to adopt a roll of greater diameter than width. Width above eighteen inches is never necessary, and with a roll twenty-four inches in diameter, and suitable clay, 30,000 bricks per day can be run through. The toy rolls of ten by twelve inches or thirteen on two, or two and one-quarter inch spindles are worse than useless, and cause endless annoyance.

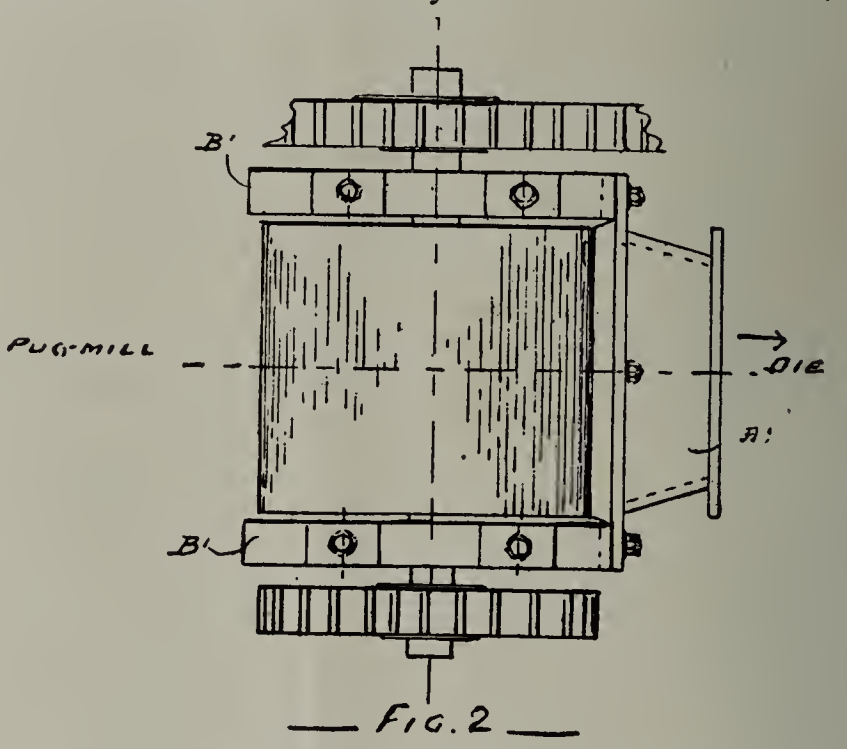


FIG. 2

Expression rollers should always be spur driven, either straight or bevel geared. Helical gearing is an unnecessary expense, but a steel pinion is a great advantage for long life and smoothness of running. Belt driving, except for occasional light use, such as making up odd stuff from the waste of a large machine, is not to be recommended. Chains have been tried, but not with conspicuous success. They were fitted to one type of machine made by the late Bedford Ironworks Company.

Well-fitted scrapers are necessary to all express rolls, and these should be adjustable top and bottom, over and under the front casting A (Fig. 1) with studs or set screws, and should not pull up from behind the rolls in an inaccessible position, making a stoppage of machine necessary. This front

casting, which is also a stay for holding the two side frame castings (band B) rigid should be so designed as to take the full width of the clay clot issuing from the rolls, and the taper to the die should be gradual and even.

Worm machines, especially when used in conjunction with a good, heavy wet pan, are more particular adapted to North of England and Ireland deposits, but for Scotland, where brickmaking is a bad second to stone, I advised and put in a few weeks a pair of express rolls.

Even in auger or worm machines the Americans are ahead of us, and their pug-mills are splendidly constructed, with enormous capacities, encased gearing, long bearings and well-designed back thrusts (a very important matter), and above all, the barrels of the mills are grooved to receive the thread of the worm, absolutely ensuring a correct mechanical carrying forward of the clay, doing away with the back rising so usual in English machine.

Only last month I had occasion to examine, at a yard that is being dismantled, a machine quite recently made by one of the largest Midland firms, and the pug-mill was ribbed internally in squares, with whatever object I do not know, but certainly useless for either decreasing lamination by breaking the clot in the screw or to assist in keeping the clay in the barrel from working backwards. At the same time, although the machine had not worked a twelve-month, the worm was quite one inch off the barrel, and driven by an horizontal engine eighteen inches by thirty-six inches had been only making about 19,000 per day.

Such yards are built for failure, and the brick are concrete.

OWENS PLANT TO MAKE TILE.

A plan is on foot for the enlargement of the plant of the Owens Pottery company at Zanesville, Ohio. The changes that are to be made will be extensive, and, it is said, when completed, will give employment to a largely increased number of skilled workmen.

It is proposed to add a tile making department which will practically double the size of the plant and which will make it one of the biggest clay manufacturing concerns in the country.

Mr. J. B. Owens, it is stated, has succeeded in interesting a number of local and Eastern capitalists in the project and the details will be ready to announce to the business world within a few days. Mr. Owens was asked about the project a few days since and, while not denying that he has plans for an enlargement of the plant under consideration, stated that he was not yet ready to give out any statement for publication. He was in conference with local business men Monday and could not be reached.

The Owens plant holds a high rank among the concerns manufacturing fine art pottery and to the casual observer it would seem that Mr. Owen's scheme of adding a tile making department gives promise of being a profitable investment.

It is stated that Mr. Owens does not intend to abandon any part of the art ware business but simply intends to put the facilities of his plant for making other kinds of clay ware to good use.

OHIO COMPANY WILL BUILD LARGE PORT LAND CEMENT PLANT COSTING $750,000 AT DIXON.

The Sandusky Portland Cement company with offices at Sandusky and Cleveland, Ohio, will commence the erection of a $750,000 factory east of Dixon, Illinois, within the near future which will be ready for operation on August 1, 1906. This mammouth concern will manufacture two thousand barrels per day of the Medusa brand of cement. To do this, it will employ at the start two hundred men, twenty-four hours a day throughout the three hundred and sixty-five days of the year. This small army of employes will earn two hundred thousand dollars every year.

To supply material for these great works 225 acres of limestone land has been purchased by the Sandusky company east of Dixon.

A building in which it would be possible to manufacture two thousand barrels of cement a day, and employ two hundred men would necessarily be of gigantic dimensions. The Sandusky Portland company will erect a huge building which will measure three hundred feet in width and twelve hundred feet in length. This stupenduous factory will be built entirely of concerete and steel and will be practically two stories high. It will be a fire-proof building of the very best type. With improved methods of building and in the operation of the factory all objections as to noise, dust, etc., will be entirely free.

The Sandusky Portland Cement company is capitalized at $1,100,000. Its first factory was established at Sandusky, Ohio, in 1893 with a capacity of eight hundred barrels per day. The company's business became so extensive that it built a plant at Syracuse, Ind., in 1900 with a capacity of 2,000 barrels per day

The Dixon works will manufacture the Medusa brand of cement which is known as a standard brand in Chicago where 200,000 barrels are used every year. Twenty thousand barrels of this cement was used in the new Lake Shore depot in Chicago, and one hundred thousand barrels in the government break water. A new patent which will be used in the manufacturing of the Medusa brand at Dixon is the water proof combination. This was invented by the manager of the company, S. B. Newberry. It preserves the cement from any damage from water. Previously, it was found that water entered the concrete, doing damage to the interior. This is entirely stopped by the new compound.

The officers of the cement company and their place of residence are as follows:

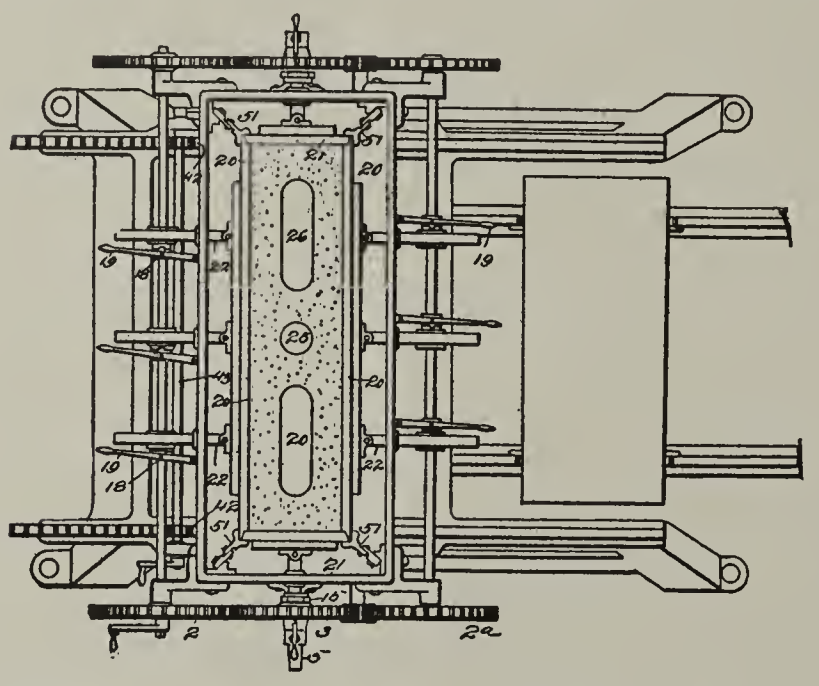
A. St. John Newberry, president and treasurer, Cleveland, Ohio; E. J. McGurie, secretary, Cleveland; S. B. Newberry, manager, Sandusky; P. B. Beery, assistant manager, Sandusky; P. J. Reilly, superintendent of plant, Syracuse, Ind.; W. Wuerth, superintendent of factory at Bay Bridge near Sandusky.

All the banking of the cement company is done through the banks at Cleveland, Ohio, where the general offices are situated.

NEW INVENTIONS THAT ARE OF INTEREST TO THE CLAY MANUFACTURER.

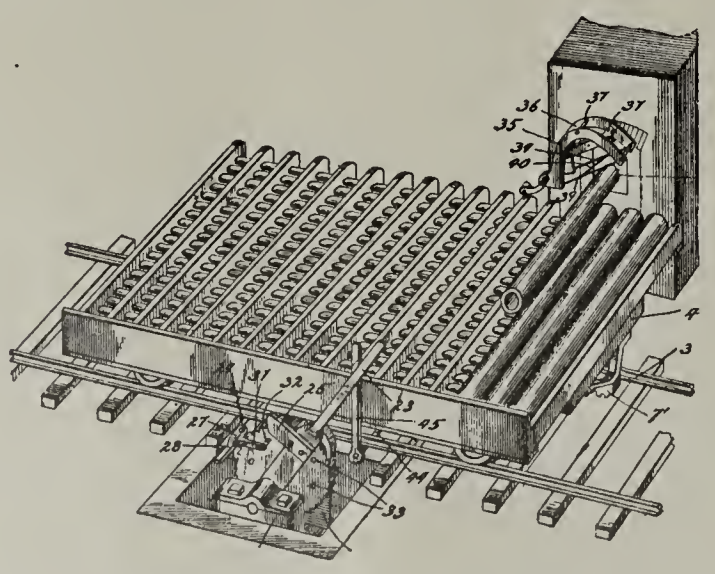
These new inventions are those that are especially of interest to any one engaged in the line of building materials and their manufacture, or machinery to make them.

797,758. Molding Apparatus. William J. Sterling, Norfolk, Va., assignor of two-thirds to A. S. J. Gammon and C. C. Graves, Norfolk, Va. Filed Mar. 7, 1904. Serial No. 197,047.



Claim.—In a molding apparatus, a rigid frame, an expansible matrix having a plurality of angularly-movable members, gearing cooperating with some of said members, longitudinally-movable shafts cooperating with other of said members, gearing carried by said longitudinally-movable shafts for transmitting movement from one of the first-mentioned shafts to the other, and means for causing longitudinal movement of said movable shafts.

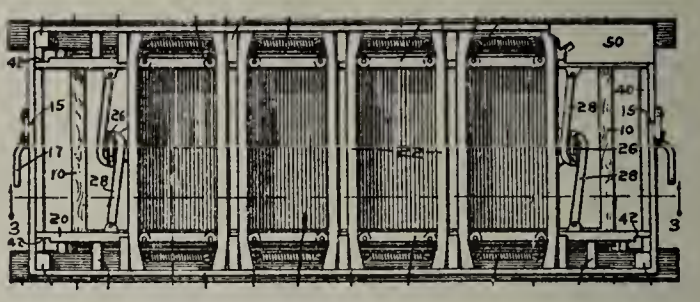
798,443. Apparatus for Drying Tile. James A. Odell, Evanston, Ill., assignor to National Vitrified Post Company, Brazil, Ind., and Chicago, Ill., a Corporation of Indiana. Filed July 13, 1903. Serial No. 165,306.



Claim.—In an apparatus for drying tile, the combination of a tram-car, a platform removably mounted upon said tram-car and provided with a series of antifriction-rollers adapted to receive thereupon direct from a molding-machine a plurality of tiles, a butt-board at one side of said removable frame upon which the ends of the tile rest when said frame is removed and lifted to an inclined position, a drying-house into which said cars are run, and means for raising said platform and tile from said tram-car and means for holding it in an inclined position during the drying of said tile.

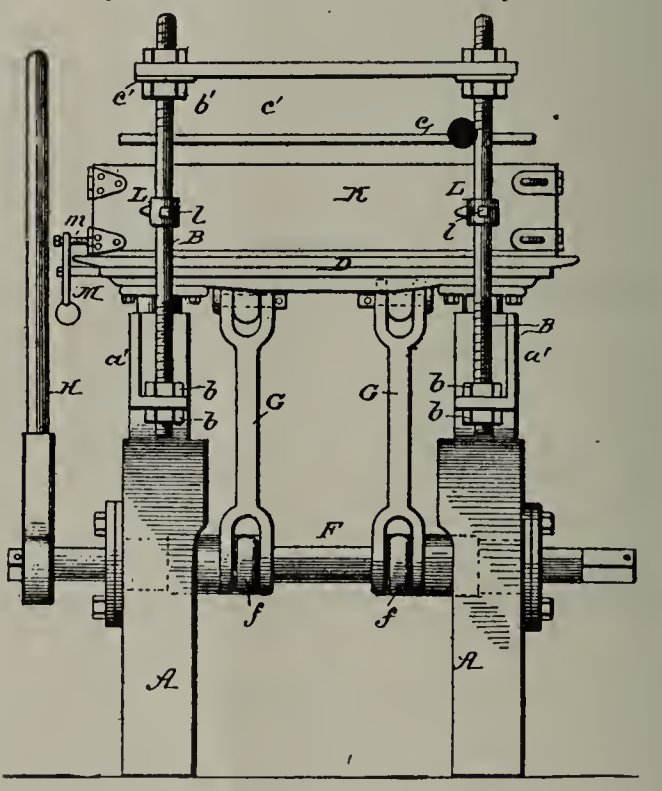
798,798. Mold for Forming Building-Blocks. John A. Johnson, Winamac, Ind. Filed Mar. 16, 1905. Serial No. 250,456.

Claim.—In a device for forming building-blocks, a frame in a plurality of separable parts, means for securely uniting said parts, a pallet, molds having sides and ends resting upon said pallet, said sides and ends being laterally movable, means for simultaneously separating the opposite members of said sides and ends and springs for returning them to a normal closed position.



798,900. Cement-Block Press. Erastus H. Harry and Isaac L. Shaw, Gibson City, Ill. Filed Mar. 23, 1904. Serial No. 199,629.

Claim.—In a press of the character described, the combination of two parallel, vertical, supporting-frames A having lateral flanges A2, vertical posts B supported on said flanges, a head-platen applied to the four posts and connecting the same at the top, and the moveable platen having pendent guide-rods E, the aforesaid frames having vertical bearings for said rods, all the aforesaid parts being detachably connected, substantially as described.



In a cement-block press, the combination, with the suitable base-frames, a fixed platen, and means for supporting it, of a movable platen for carrying a block-former, a stop for the latter, which consists of a weighted bar pivoted to the platen and having at its free end a set-screw which is normally held in position for engagement with the former, substantially as described.

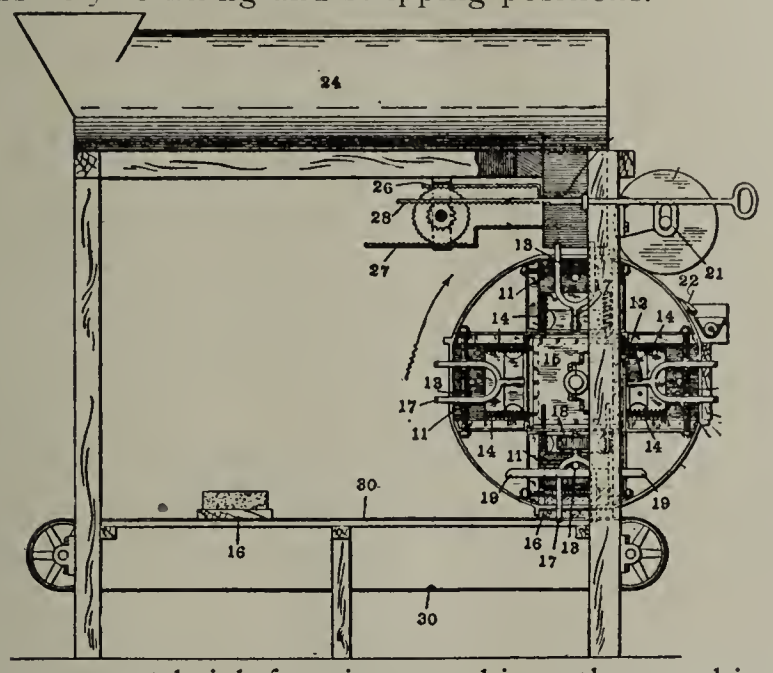
798,788. Fire-Brick. Robert O. Hayt, Corning, N. Y. Filed Dec. 9, 1904. Serial No. 236,230.

Claim.—The process of forming a refractory material which consists in mixing with finely-divided siloxicon, a liquid silicate of sodium and then burnng out the sodium from the compound.

The process of forming a refractory material which consists in mixing finely-divided siloxicon with a liquid silicate of sodium to form a yieldable substance, then molding the yieldable substance into a block and then subjecting the block to a high temperature.

798,599. Cement-Brick-Making Machine. Winburn F. Conrad, Indianapolis, Ind., assignor of one-half to Charles A. Owen, Indianapolis, Ind. Filed Sept. 17, 1904. Serial No. 224,891.

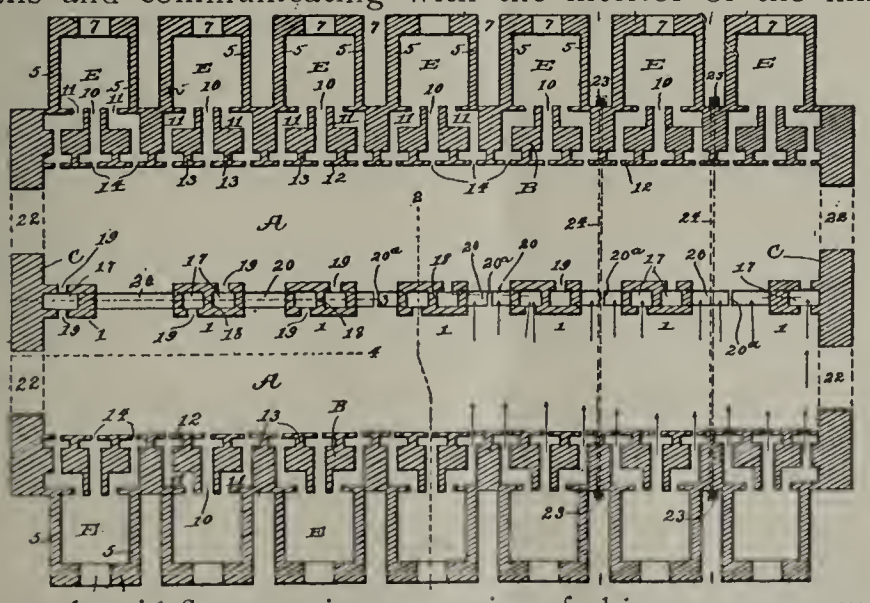
Claim.—In a cement-brick-forming machine, a plurality of independent molds, a plurality of abutments fitting one within each of said molds and forming one end thereof, a removable pallet at the opposite end of each mold, means for temporarily holding a pallet opposite the open end of each mold, means for stripping each mold over its abutment, while the pallet is maintained at a constant distance from the abutment, means for releasing the pallet with its accompanying bricks, and means for bringing the molds successively to filling and stripping positions.



In a cement-brick-forming machine, the combination of a rotatable drum, a plurality of open-ended molds carried thereby and movable radially therein, a plurality of abutments fitting one in each of said molds and forming a closure for the inner end thereof, means for securing a pallet adjacent each of said molds in position to form a closure for the outer end of the mold, means for rtracting the mold over its abutment whereby the mold may be stripped from the brick, a pressure-roller arranged adjacent the drum in position to exert pressure upon a freshly-filled mold.

799,091. Brick-Kiln. John W. Reagan, Powell Station, Tenn. Filed Feb. 1, 1905. Serial No. 243,637.

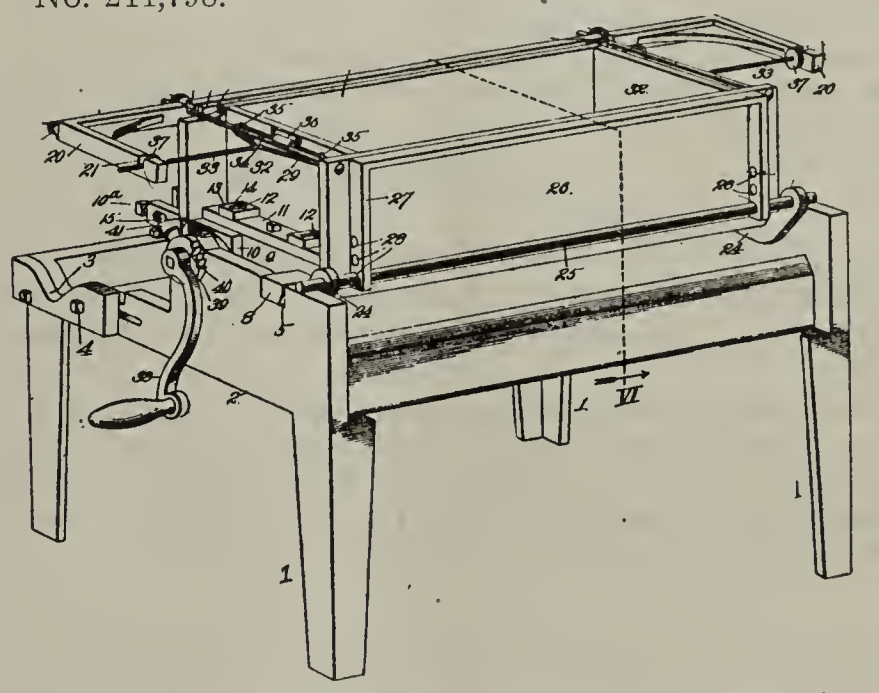
Claim.—In a kiln, the combination with end walls and side walls, the latter having flue-openings through their bases, of furnaces arranged along the exterior of said side walls and communicating with the interior of the kiln



through said flue-openings, a series of chimneys arranged in a row along the longitudinal middle of the kiln and having their flues extending below the floor-level, ports in the chimneys immediately above the kiln-floor and in the sides of the chimneys directed toward the side walls of the kiln, and floor-flues in line with said row of chimneys and opening into the flues of adjacent chimneys, substantially as described.

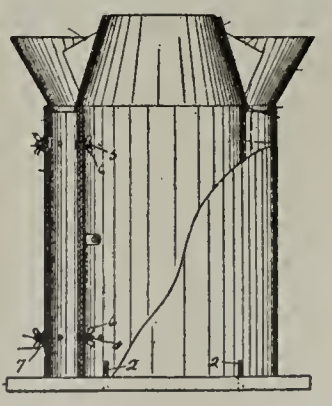
In a kiln, the combination with end walls and side walls, the latter having flue-openings through their bases, of furnaces arranged along the exterior of said side walls and communicating with the interior of the kiln through said flue-openings, chimneys arranged opposite each furnace and in a row along the longitudinal middle of the kiln and having their flues extending below the floor-level, ports located in the chimneys immediately above the kiln-floor and in the sides of the chimneys directed toward said side walls, and floor-flues in line with said row of chimneys and opening into the flues of adjacent chimneys, substantially as described.

799,610. Artificial-Building-Block Mold. Harry E. Maynard, Kansas City, Mo. Filed Feb. 8, 1905. Serial No. 244,798.



Claim.—A mold, comprising a suitable support, a face-plate carried by and having a hinged relation with said support, a side having a hinged relation with the face-plate, a frame having a hinged relation with the face-plate, a side interposed between said frame and the face-plate, end plates upon the face-plate and between the sides, and means for securing the sides and end plates reliably together.

799,559. Mold for Cement Tile. John Groscop, Auburn, Ind. Filed Mar. 16, 1905. Serial No. 250,375.



Claim.—In a tile-forming mold or apparatus, an inner and outer upright cylindrical casing in concentric relation with an interposed annular chamber, the said casings being open at both ends; the outer lapping edge of the outer casing having a plurality of slots coincident with bolt-openings in the inner edge adapted to receive securing-bolts by which the cylinder can be expanded or contracted diametrically; a supporting-base for the said mold having a series of radially-arranged removable centering-pins, and a funnel removably mounted upon said casings consisting of two concentric sections oppositely flaring and rigidly connected as described.

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ENTERED AT THE CHICAGO POST OFFICE AS SECOND-CLASS MATTER.

Vol. XXVII. OCTOBER 16, 1905 No. 7

"I like to read American advertisements. They are in themselves literature, and I can gauge the prosperity of the country by their very appearance."—William E. Gladstone.

When times are dull and people are not advertising is the very time that advertising should be the heaviest. Ninety-nine out of every hundred merchants advertise most when there is least need of it, instead of looking upon advertising as the panacea for their business ills.—John Wanamaker.

CONVENTIONS.

The twenty-eighth annual meeting of the Illinois Clay Workers' Association will be held in January.

The sixth annual meeting of the Wisconsin Clay Workers' Association will be held at Menominee, date not set.

The twentieth annual meeting of the National Brick Manufacturers' Association will be held at Philadelphia, Pa., February 7, 8 and 9, 1906 (date of meeting).

The fourth annual meeting of the Ontario Clay Workers' Association will be held at Hamilton, date not set.

The second annual meeting of the National Association of Manufacturers of Sand-Lime Products will be held at Detroit, Mich., December 5, 6 and 7, 1905. Headquarters at Hotel Cadillac.

Don't overlook the smallest opportunity. It will grow.

Fireflies shine only when in motion. Moral: Keep a moving.

It is far better to take people as they are than to waste valuable time in trying to make them as they should be.

"You cannot wash away a leopard's spots by any application on the outside. The only possible chance is to purify the blood, and this must be done from the inside as a matter of course."

The Clay Record is semi-monthy. It enjoys having the largest circulation of any clay journal in the world. The subscription price is one dollar per year. It produces advertisng results second to none. Try a subscription or an advertisement.

How reassuring it is to go among the brethren, and just at this time!

We have pleasure in reporting that the outlook for the manufacturer of brick making appliances and the manufacturer of brick as well never was better; that unless all signs fail the next season's business will be greater than any season in the history of the trade.

We did not find anybody worrying. Everybody busy with plans or schemes for new business; at the same time fastening the threads of past dealings, altogether so absorbed it was with difficulty any attention to outside matters could be secured. And as we said at the beginning it is reassuring, and we congratulate the clay industry in all its branches on the prospects for the coming season of 1906.

We have regarded it as one of the functions of the general government to provide a banking system, "post-bank" type for the masses, for those outside of the active daily business life, to insure security and a fair interest rate; and for some time have warned that the few in control of banks were profiting themselves and their friends at the expense of the small depositor. In other words we contend that the banks have their field in financing the affairs of the business man and manufacturer; that when surplus funds are to be handled it is into speculation and gambling they go themselves and their friends at the risk of the small depositor's funds, and the opportunity should not be afforded them. The best illustration of this point may be seen in the recent developments in the insurance investigation. We do not go into details for every reader himself is acquainted with them and may apply them. It remains to be seen whether in the coming congress the friends of the people can secure to them some of the things a few have been clamoring for in the years gone by and one thing in particular, a savings bank system enabling the government to handle the savings of the people in absolute safety, far removed from the elements of Wall street.

The Lancaster (O.) Stone Co. has been incorporated with $200,000 stock to manufacture stone and clay products by E. M. Fullington, J. A. Ellis, G. S. Frambes, J. A. Taft and F. H. Hartel.

ACCIDENTS, DAMAGES AND LOSSES.

A receiver has been appointed for the Newport Brick & Clay Co., Newport, Ind.

The Lehigh Clay Works, Lehigh, Ia., were sold at sheriff sale to H. R. Heath, who will operate them.

Two men were badly injured by the falling of kiln walls at the plant of the Nelson Vitrified Brick Co., at Mound City, Kansas.

On the application of J. O. Lash, the court has appointed W. M. Tracey receiver for the Ohio Brick & Clay Co., Mineral City, Ohio.

The Hall Brick Co., Detroit, Mich., sent out checks for 5 percent of its indebtedness as the first dividend which will also be the last one.

Dykema & Sons, Grand Rapids, Mich., manufacturers of machinery for making cement, brick and blocks filed a voluntary petition in bankruptcy.

The court has decided that Delia A. Phillips cannot get damages from the Lawrence (Kansas) Vitrified Brick Co., for annoyance sustained from smoke from the yard.

Albert Mass, an employe of the Alonzo Curtis Brick Co., Grant Park, Ill., got his clothing caught in a brick machine and torn off from him, besides being badly hurt.

Hugh Hamilton, a pottery manufacturer at Greensboro, Pa., was shot and mortally wounded in a hotel dining room at Pittsburg, Pa., by a crazy Swede which he had never seen before.

Steps have been taken to have the Ferguson Brick Co., Troy, N. Y., declared a bankrupt, the plaintiffs claiming that the company had allowed some creditors to secure a preference.

By the bursting of a nine-ton fly wheel in the engine room of the Terre Haute (Ind.) Vitrified Brick Co.'s plant, the fireman was badly injured and the engine room of the plant wrecked.

John M. and John S. Rumbaugh were charged with embezzlement and conspiracy in the use of the funds of the John M. Rumbaugh Brick Co., Greensburg, Pa., and are under bail at $5,000 each. The company is in the hands of a receiver.

The White Portland Cement Co., Ann Arbor, Mich., has made an assignment for the benefit of its creditors. The debts are placed at $262,683 and assets at $64,612. Wm. J. White, the chewing gum manufacturer, practically owns the company and the accounts against it.

POTTERY BUYS TWO PLANTS.

Announcement is made that the Monmouth pottery at Monmouth, Ill., has let the contracts for big buildings, which will increase its output, which last year amounted to 1,000 cars, or 14 per cent of all the ware used in the country, one-third. The company has recently purchased plants at Burlington and Marshalltown, Iowa, which will be dismantled and the machinery used in the buildings about to be erected.

OBITUARY.

George W. Welsh, one of the best known pottery workers of the city of East Liverpool, Ohio, died from paralysis.

John O'Neal, one of the early residents of Marshalltown, Iowa, and a brick manufacturer, was brought to that city from Carroll to be buried. He was 85 years old.

William Bradley, an employe of the Canal Winchester, O., Brick & Tile Co., who sustained a broken back while at work, died of the injury. He was 50 years of age.

Andy Hutton, foreman of the Adams Bros. Brick Works at North Bristol, Tenn., who was injured by the falling of a bank of dirt, died at his home. He was 30 years old.

Samuel A. Caldwell, at one time a member of the Knoxville (Tenn.) City Council and a well-known brick manufacturer, died of heart disease. He was 73 years of age.

A CHANGE IN THE MANAGEMENT OF THE TIFFANY COMPANY.

Mr. James Van Inwagen, Jr., has resigned his position as Vice President and General Manager of the Tiffany Enameled Brick Company, Momence, Ill., and he and his family will shortly move to Chicago and later to New York, to take up his duties as General Manager of an Electric Manufacturing Company.

Mr. Joseph Moulding, of the firm of Thos. Moulding & Co., of Chicago, has been appointed General Manager to succeed Mr. J. Van Inwagen, Jr., and will begin at once. Mr. Moulding is well qualified for the position, as he is familiar, not only with the enamel brick business, his firm having been the Chicago agents of the Tiffany Co., but also for the reason that he has been all his life in the brick business, his father being one of the first to make common brick in the city.

CATALOGUE No. 1040.

The Atlas Car & Manufacturing Company of Cleveland, Ohio, have just issued their catalogue No. 1040. It contains only a partial line of the cars made by this large and growing concern, such as are used in and around brick yards, sand lime brick plants, cement plants and concrete block works.

Standard sizes are built but the company does not confine themselves to them and on the contrary will build anything in the line of cars to suit the client. Within the last few years many improvements have been made in all kinds of cars. They are built much stronger and durable. Turntables, rails, decks, switches, frogs, racks and hardening cylinders for sand lime brick plants are made.

ILLINOIS PRISON-MADE BRICK.

The Illinois State Federation of Labor has sanctioned the use of prison-made brick which under the statutes must hereafter be used on all state buildings. This averts a serious labor trouble threatened when it was announced that prison-made brick would be used in the new dairy building on the state fair grounds at Springfield.

THE TWENTIETH ANNUAL CONVENTION OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION TO BE HELD AT PHILADELPHIA, PA., FEBRUARY 5th TO 17th, 1906.

After carefully considering the attractions of the various cities to which we have been invited, and the availability of each for our purpose at this time, it has been determined to hold our next annual meeting at Philadelphia, Pa., February 5th to 17th. As in former years, the American Ceramic Society will hold its meetings the first of the week, and the sessions of the N. B. M. A. will follow. It is the intention to have but one session a day, thus affording visitors ample opportunity for sight-seeing.

It has been sixteen years since the Association held its previous convention in the City of Brotherly Love, but those who participated in the first N. B. M. A. meeting there will remember the large attendance, the instructive sessions and the good cheer and cordial hospitality of the local members. The same open-hearted good-fellowship which made that meeting so memorable awaits us now.

The attractions of Philadelphia are numerous and varied. There are within its gates many things of historic interest. the first of which is Independence Hall, where the visitor will find the old Liberty Bell, so dear to the heart of every American citizen. Then there is the United States Mint, the greatest money-making establishment on this continent, the splendid City Hall, costing many millions, the beautiful Masonic Temple, and many similar structures. These, the famous Cramp shipyards, and numerous other like industrial institutions, including the clayworking plants, of which there are many of peculiar interest to the members of the Association, will be open to the wearers of the N. B. M. A. badge.

To those on pleasure bent, Philadelphia offers an endless variety of amusement; there are theaters galore, where the grave and gay alike may indulge their fancy, whether it may be for music, drama, or farce. While the public gardens, museums and art galleries and industrial schools and institutions of learning, afford an unlimited field for study. But Philadelphia is not alone attractive and desirable as a convention city by reason of the wealth of her own resources, but as well for her proximity to other great cities of the East. Atlantic City, the most famous of American winter resorts, is distant but an hour's ride; while Trenton, the great pottery center, is nearly as accessible, and New York, Baltimore and Washington are reached almost as quickly. There is no better train service in the world than now operates between Philadelphia and all these cities, fast trains every hour throughout the day being the rule. Hence, a series of side trips of exceptional interest may easily be arranged for. As in former years, these side trips will be made the second week, the first week being devoted to convention work proper.

Hotel headquarters will again be at the Continental, one of the most commodious and best appointed hostelries in the land. A minimum rate of $3.00 per day on the American plan will be made to delegates and those accompanying them. The Convention hall and exhibition room will be provided in the hotel and every comfort and convenience possible will be afforded all who attend. An interesting program is now being prepared and will be announced later, with full particulars as to reduced railroad rates, etc.

Those desiring further information as to the requisites of membership, etc., are requested to communicate with the Secretary at Indianapolis.

THE EXECUTIVE COMMITTEE,
J. M. BLAIR, *President.*
THEO. A. RANDALL, *Secretary.*

NEW COMPANY TO MAKE EXTENSIVE ALTERATIONS AND IMPROVEMENTS.

The Westellar Terra Cotta Co. has acquired a twenty-year lease with the option to purchase within six years, of the brick works at Sylvester, N. S., which have been worked until now by the Stellarton Brick & Tile Co. It is the intention of the new company to make extensive alterations and improvements, and to turn out pressed or facing as well as ordinary brick.

A kiln for the pressed brick will be constructed under the direction of R. P. Brown, who has had large experience in Britain and elsewhere in the making of all kinds of brick, and terra cotta work. Mr. Brown has no doubt whatever as to the suitability of the clay for the best quality of pressed brick, which at present has to be imported from Quebec.

It is expected to have the first burning of pressed brick by November. The exhaust steam from the engine and the waste heat from the kilns will be utilized in the drying process.

The first shed, 100x40 feet, will be erected immediately under the supervision of Thomas Simpson. The alterations in the machinery will be effected by the Brown Machine Co., New Glasgow, N. S.

BIDS FOR BRICK FOR THE GOVERNMENT OPENED.

Elliott Woods, superintendent of the Capitol, opened bids for 9,000,000 brick to be used in the construction of the new House of Representatives and Senate office buildings. The lowest estimate was made by the Standard Brick Company, Washington, D. C., $7.79 per thousand, with a promise to deliver 35,000 a day, or 1,000,000 in thirty days. The highest bid received was $14.40 a thousand.

The bids which were opened yesterday and terms for delivery are as follows:

Highland Brick Company, $7.97 per thousand, 210,000 per week; Washington Brick and Terra Cotta Company, $8.60 per thousand, 210,000 per week; Potomac Brick Company, $8.63 per thousand 210,000 per week, 3,000,000 brick; Anacostia Brick Company, $8.65 per thousand, 100,000 per week, 3,000,000 brick; Laurel Clay Products Company, $9.45 per thousand, 150,000 per week, 2,000,000 brick; Standard Brick Company, $7.79 per thousand, 35,000 per day, or 1,000,000 in thirty days; Monticello Brick Works; $11.80 per thousand, 450,000 per week; Mack Manufacturing Company, $14.40 per thousand, delivery as needed.

MAYOR ORDERS BRIDEWELL-MADE MATERIAL TO BE UTILIZED FOR NEW MUNICIPAL BUILDINGS AT CHICAGO.

In order that the brick manufactured at the Chicago bridewell by the city's prisoners may not enter the open market to compete with that made by the workingmen of the city, Mayor Dunne instructed the heads of the departments to use the convict-made material for all municipal buildings.

SAYS GASES FROM GLASS WORKS SAND KILNS ARE A NUISANCE.

Suits aggregating $6,000 have been filed in the superior court against the Colonial Brick company, Kokomo, Ind. The complainants ask damages and the abatement of a nuisance.

Louisa Rost and Amanda Hancock who own property immediately north of the kilns of the company are the complainants. They set out in their complaints, which are very similar, that the noxious gases arising from the stacks of the kilns have killed all the vegetation on their lots; that the furniture in the houses is covered with soot and dust and the fumes cause the residences to be unhealthful places of residence.

Mrs. Rost alleges that frequently she has been forced to leave her home to breathe and claims that her health has been seriously affected by the inhalation of the polluted atmosphere.

Mrs. Hancock says that her state of health has been so greatly impaired by the effects of the gases that she is forced to spend much of her time in bed.

Each complainant asks $3,000 and the abatement of the alleged nuisance.

COMPANY ADDS $80,000 TO ITS CASH SURPLUS IN A MONTH.

The Illinois Brick Company, Chicago, as a result of another month of record-breaking earnings for September, has added $80,000 more to its cash surplus; this after paying its regular dividends and putting $10,000 cash, as usual, into its monthly outlay for betterments. The cash surplus is now almost up to $1,000,000; that is, it is almost equal to one-quarter of its capitalization, which is $4,000,000, with no bonds, no common stock and no floating debts out. Thus for every share of stock there is almost $25 represented in actual cash, to say nothing, of course, of the value of this company's twenty-six plants and real estate holdings. The officials of the company expect even more satisfactory results next year, as the great boom in Chicago building seems to be making more and more headway, as shown by continual gains in number of permits and value of new buildings to be erected.

WAGON TAX ANNOYS PRESS BRICK COMPANY.

Owing to the arrest of one of its teamsters in Webster Groves for violation of the new wagon tax ordinance, the Hydraulic-Press brick company, St. Louis, Mo., gave notice that hereafter it would refuse to deliver brick in Webster and other suburbs of St. Louis imposing the tax.

The officers of the company had not heard of the new law when they started a wagon load of brick to a contractor in Webster. The driver was arrested by the town marshal, hauled before the mayor and fined $6. He was also obliged to take out a license, costing $5. Officers of the company were indignant when they learned of the affair, but paid the fine.

MEETING OF INDIANA TILE MANUFACTURERS.

When drain tile manufacturers, of the central part of the State of Indiana returned to their homes after a meeting at Anderson, they declared they did not discuss prices. Some of the manufacturers smiled while making denial of price agitation, while others looked serious, and said the meeting was only for "mutual benefit."

Lee Goodwin, of Curtisville, secretary of the Gas Belt Association of Drain Tile Manufacturers, was one who said it was a "mutual benefit" meeting. "We have these little gatherings every three months," the secretary said, "just to keep well acquainted, you know, and talk and have a little social time. The price of tile is down a little. The number of factories increase gradually, but our territory does not increase much, so that it is getting to be a supply that exceeds the demand. That means that prices could not be raised."

At the meeting were: F. D. Oakley and James Luther, Terre Haute; Lee Goodwin, Curtisville; J. F. Lingerman, Brownburg; A. Williamson, Sweetser; F. Baum, Orestes; S. M. Cowgill, Terre Haute; J. M. Powell, Brooklyn; Weaver Davis and D. B. Davis, Anderson; J. B. Dickson, Whiteland; R. A. Brown, Gaston; Calvin Baum, Sweetser; George McFall, Herbst, and J. B. Casey, Colfax.

MINING INTERESTS MAY BE COMBINED.

A move is on foot at Macon, Ga., to combine the clay and kaolin mining interests of this city into one gigantic corporation with a view of manufacturing the crude products into wares at this point. At present large quantities of the choice clays and kaolin are shipped to northern and eastern cities, where they are converted into valuable wares. Quantities also are shipped to England and Europe, and the products are shown to be very fine from the goods that are made.

Macon has several clay and kaolin mining companies, and the output is sufficient to keep a large ware manufacturing concern steadily turning out goods. It is said that forty per cent of the costs of the different clay and kaolin products go to transportation companies carrying the crude products to and the manufactured goods from the factories, and capitalists have reached the conclusion that these profits can be realized on the goods at home. Owners of the mines are now very much interested in the proposition to combine and manufacture the finished product at home.

HIGHEST RECORD OF SALES.

A shilling higher is being obtained for Hudson river brick this week, making the top price which is being paid in numerous cases $7.62⅝, says the Real Estate Record and Builders' Guide. A new record for the sale of Hudson rivers was made last week, when 116 cargoes arrived and 116 went out. Averaging 300,000 bricks to a cargo, gives a total for the week of 34,800,000. This is the largest quantity ever taken by the New York market. Mark it down—116 boats for the week ending September 23, 1905, at prices ranging from $7.50 for tops down to $5.25 for pales.

SAND OR LIME-BRICK OR BLOCK NEWS.

W. H. Brooks & Son, Macon, Ill., have commenced the manufacture of cement building brick.

Waco, Texas, capitalists are considering using the sands of the Brazos river for making sand-lime brick.

Charles Neff has withdrawn from the Bryon (O.) Brick Co. and will engage in the manufacture of cement blocks.

The Menominee (Mich.) Brick Co. are now bricking up the outside of their plant so as to keep out the cold weather.

Augustus Wolf, Chambersburg, Pa., will build a large factory for the making of concrete blocks under the Palmer patents.

Macon, Ga., local capital is investigating the making of sand-lime brick with a view of erecting a large plant in that city.

Frank Broering, Latonia, Ky., has bought 15 acres of ground and will build a large sand elevator and brick manufacturing plant.

The Bellefounte (O.) Cement Block & Con. Co., have purchased additional cement block machines and are otherwise increasing their business.

The product of the Holland (Mich.) Brick Co. is being made at the rate of 15,000 brick per day and being hauled away as fast as manufactured.

The Newburgh (N. Y.) Sand-lime Brick Co.'s brick have stood the New York inspection and the company will now ship their goods to the city.

The Silicated Brick Co., Denver, Colo., are cutting away the red sandstone that mark the gateway to Platte canon and making them into red sand-lime brick.

The Western Sand-lime Brick Co., Omaha, Neb., has been incorporated with $200,000 capital stock by M. E. Ashton, J. N. Boyce and M. O. Cunningham.

The Cement Pressed Brick Co., Benton Harbor, Mich., will have their new plant on 2nd street in operation, making 25,000 brick daily, within the next two weeks.

The Ohlemacher Brick Co., Michigan City, Ind., will move from the Leeds Building to its plant, Franklin and 4th Sts., where the company erected a convenient office.

W. T. Miller, an experienced brick manufacturer and concrete man, who has been at West Point, Miss., has decided to locate at Centralia, Ill., and manufacture concrete blocks.

The Texas Building Block Co., San Antonio, Texas, has been incorporated with $20,000 capital stock by Alfred Vandestucken, Jacob Wagner, R. H. Ilker, Wm. A. Cocke and W. C. Animann.

The United States Brick Corporation, Michigan City, Ind., have started their new sand-lime brick plant. The National system is used. Eight thousand one hundred and sixty dollars has been spent for machinery.

The Rochester (N. Y.) Composite Brick Co. have recently elected the following officers: Homer Knapp, president: I. W. Holden, secretary and treasurer; F. S. Lacy, A. Z. McKittrick, H. E. Wilson, E. L. Yeomans, John P. Caley, Z. Elkins and E. G. Marsh directors.

MISCELLANEOUS ITEMS.

C. A. Owens, Box 591, Durham, N. C., wants stiff-mud machinery catalogues and information.

J. J. Phillips Brookhaven, Miss., wants information about the latest improved brick machinery of all kinds.

J. L. Daugherty of the Streator (Ill.) Clay Mfg. Co., is drilling for oil and gas on the Bush farm, 6 miles southeast of the city.

The Salina (Kansas) Vitrified Brick Co. has made its first burn with oil and will at once put in additional kilns to burn paving brick.

The new portland cement plant at Speeds, Clark Co., Ind., owned by the Louisville (Ky.) Cement Co., will be ready for operation in 30 days.

Judge Joseph Rae, Savannah, Mo., is having clay tested that was found on the Satterlee place and steps will be taken to manufacture brick and tile.

The Humboldt (Tenn.) Brick & Tile Works, under the management of J. T. Brown, has commenced making brick and are turning out a high grade stock.

The tile factory for Stockport, Iowa, is a sure thing. The machinery is to be shipped from New London at once. G. W. Wheatley and R. M. Harlan are the owners.

The Coffeyville (Kansas) Pottery & Clay Co. has let the contract for rebuilding its plant, which was destroyed by fire last spring. Plant will be completed within two months.

Plans for the large brick plants to be erected in the Hocking Valley, Ohio, by the Columbus & Hocking Coal & Iron Co. are now before the New York stockholders and it is thought the company will let contracts soon for their construction.

The Melville (La.) Brick Co. recently incorporated with $50,000 capital stock will begin making brick as soon as the quarantine will permit travel so as to secure labor. C. W. Krotz is president and D. H. S. Joseph, secretary, treasurer and general manager.

The German Clay & Stoneware Works of Berlin, Germany, has bought 60 acres of land near Poughkeepsie, N. Y., and will open a factory in the spring employing hundreds of men. The company is capitalized at over $1,000,000 and has five large plants in Germany.

The National Mfg. & Con. Co., registered office Camden, N. J., has been incorporated with $25,000 capital stock. Incorporators, H. B. Walker, R. S. Taylor and A. G. Bird. The company is to manufacture and deal in brick and material for buildings.

The West Virginia Silica Block Co., Wheeling, W. Va. has been incorporated with $100,000 capital stock. Incorporators are Emil Hollgren and K. C. Yertzell of Wheeling, W. B. Williams of Glendale, Wm. Hall of McMeehan, and L. H. Sherwin of St. Louis, Mo.

The Walker Mining & Mfg. Co., Pierce, Ohio, has been incorporated under South Dakota laws with $500,000 capital stock. J. B. Weigel will be the managing head of the plant. Offices will be in Cleveland, O., Pittsburg, Pa., and Chicago. Besides making high grade brick the company will manufacture clay insulators for electrical wiring.

R. H. Bobier will establish a brick plant at Pauls Valley, I. T.

The Suburban Brick Co., are building two new kilns at their Moundsville, W. Va., plant.

The Bend (Ill.) Brick & Tile Co. has increased their capital stock from $1,000 to $30,000.

The plant of the Oscaloosa (Ia.) Paving Brick Co. will be enlarged and a tile equipment added.

A. P. Green of St. Louis, Mo., is considering the building of a sewer pipe works at Iola, Kansas.

T. A. Habel, Henning, Ill., has installed an 80-horse power engine in his plant, taking out the old 40-horse power.

Charles Neff has retired from the Bryan (O.) Brick Co. and the business hereafter will be carried on by George Neff.

The Alvin (Texas) Pressed Brick Co. has been organized with $10,000 capital stock. F. A. Haas is one of the directors.

Judge Quinn of Wells, Minn., is having samples made of his clays and if satisfactory will organize a company to manufacture brick and tile.

William Morris, 211 Polk St., Pueblo, Colo., has found clay near the town that he has had tested and he will try to build a brick and tile plant.

Smith & Spencer are succeeded in the manufacture of brick at Portsmouth, O., by the Portsmouth Brick & Tile Co., which has recently been incorporated.

Albert E. De Rosary has leased the brick plant at Plaistow, N. H., from Hiram Gilbert for a term of 5 years and is going to make a water struck brick. New machinery will be added.

A. F. Shotts has sold his interest in the American Brick & Tile Co. at Mason City, Ia., to C. L. Smith and resigned as manager of the plant. G. E. Winter, of the Commercial Savings Bank succeeds him.

The Mineral (Va.) Brick Co. has been incorporated with $10,000 capital stock. Incorporators, C. C. Sutton, president; J. B. Wooddy, vice-president; M. A. Sears, secretary-treasurer and general manager.

The Choctaw Pressed Brick & Terra Cotta Co., Mansfield, Ark., has changed its name to Choctaw Brick & Gas Co. and will pipe their gas to Ft. Smith, where the stockholders of the company mostly live.

The Westeller Terra Cotta Co. has acquired a 25-year lease with option to purchase the Stellatton Brick & Tile Co. Works at Sylvester, Nova Scotia. The new company will make extensive alterations and improvements.

The Niles (O.) Fire Brick Co.'s plant has been given its trial test and now is in full operation, working about 100 hands. The plant is owned by Congressman W. Aubrey Thomas and managed by T. E. Thomas, his brother.

The Edwards Vitrified Brick & Sewer Pipe Co., Albion, Ill., recently elected the following officers: George Zeigler, president and general manager; Frank Gillard, vice-president; James M. Endicott, secretary and treasurer; G. F. Martin, superintendent. They are now drilling for fuel.

This year the Decatur (Ill.) Brick Company made 9,000,000 brick.

The Commercial Club of Dodgeville, Wis., is working to get a brick yard for that city.

George Tobin of Coeymans, N. Y., has bought the farm of Herman Loewe at Castleton and will make brick.

J. K. Mersinger, Condon, Oregon, has his new brick yard in operation and will soon turn out the first kiln of brick.

F. T. Crump, Columbus City, Ind., will build a dryer 120 x60 feet and otherwise improve his plant to the extent of $10,000.

A brick and tile company is being agitated for Buffalo Center, Iowa. Clay has been found on the Ross Farm north of the city.

The Rome (Ga.) Brick Co. are considering hiring from the state 50 convicts on account of not being able to get labor when it is neded.

The Massillon (O.) Stone & Fire Brick Co. has completed arrangements for lighting its entire plant, including the clay mines, with electricity.

J. E. Loreman has bought 625 acres of land north of Ballard, Wash., and will establish a shingle mill and a brick yard and establish a new town.

J. T. Bond, who installed the electric light plant in Artesia, N. Mex., is arranging to manufacture brick of the clay that he has found in that place.

The mammoth plant of the Burt Portland Cement Co., at Bellevue, Mich., is now turning out cement. W. R. Burt of Saginaw is the owner of the plant.

The work has started on the erection of the Brook (Ind.) Brick & Terra Cotta Co's. plant. In addition to the buildings already up $60,000 will be expended.

The Hicks Clay Co., Roodhouse, Ill., has been formed. Officers are Charles T. Hicks, president and manager; H. C. Worcester, secretary, and C. W. Payne, treasurer.

The Acheson Siloxicon Articles Co., Niagara Falls, N. Y., is a new company with $500,000 capital stock. The company will make from Siloxicon, crucibles, muffles, brick, etc.

The Defiance (Ohio) Tile Mills Co. has been incorporated with $50,000 capital stock by George H. Dieus, C. C. Kuhn, F. Hey, L. E. Kitterman and Charles J. Davourst.

The Superior Brick Co., Lima, Ohio, has accepted the resignation of Manager J. L. Tannehill and named instead Jess Morriss. The directors have also voted to spend several thousand dollars for improvements.

The Fond du Lac (Wis.) Cement Brick Mfg. Co. has changed its name to the Fond du Lac Pressed Brick Co. and are now making clay brick instead of cement brick. The capital stock has also been increased to $50,000.

The U. S. Cement Machine Co., Dashler, Ohio, has been incorporated with $10,000 capital stock by F. H. Meyer, S. A. Jones, S. Cottingham, David Hoskinson and J. B. Gribbell. They will make machines for making cement shingles.

Clay and Clay Property for Sale

550 Acres of Land in Cherokee County, Kansas, with ovens for making coke, natural gas for burning brick, etc Mo. Pac. and Mo. K. & T. railroads' tracks on the property.

For full particulars address

BORDEN & LOVELL,

17 Battery Place, NEW YORK CITY

WANTED

A man to take charge and manage a brick and tile plant. He must thoroughly understand machinery, setting brick and drain tile and burning same. The plant is engaged in manufacturing stiff mud brick, dry pressed brick and drain tile. A permanent position to the right man. State age, experience, salary expected and full particulars. Prompt action required. Address,

FACTORY,
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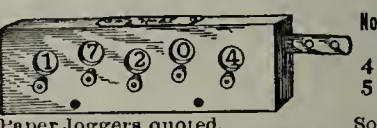

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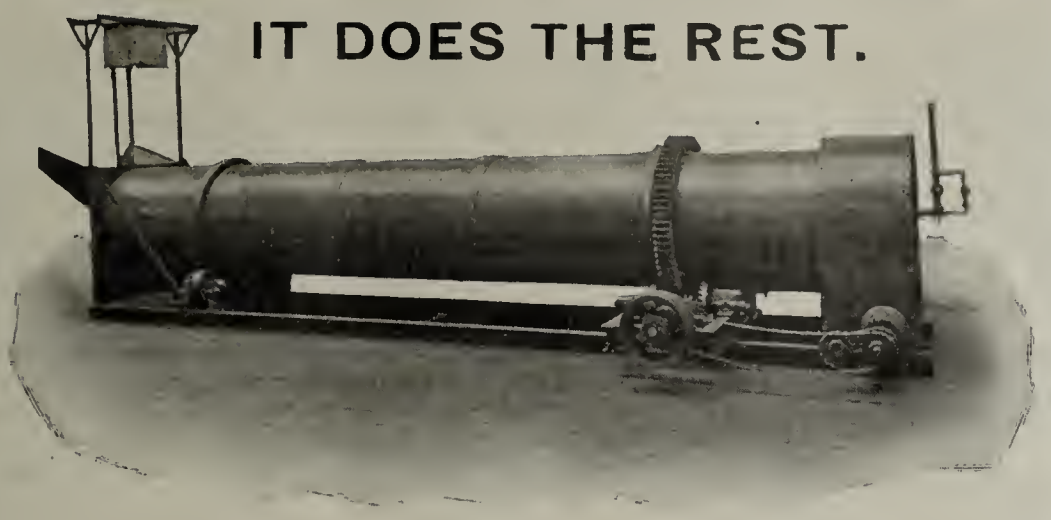

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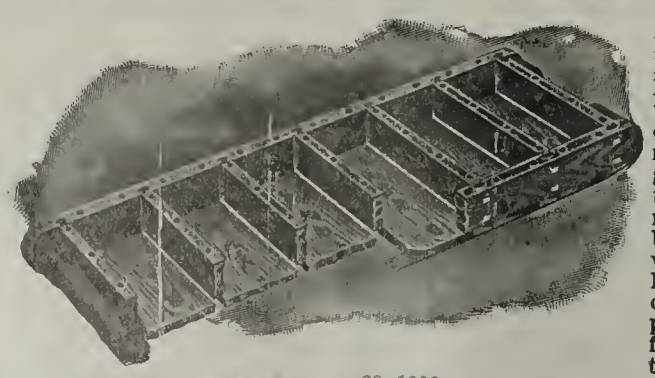

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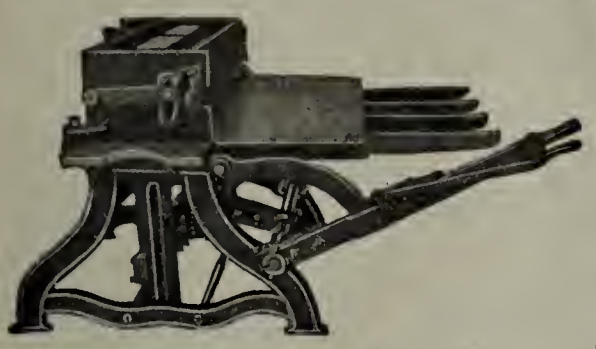

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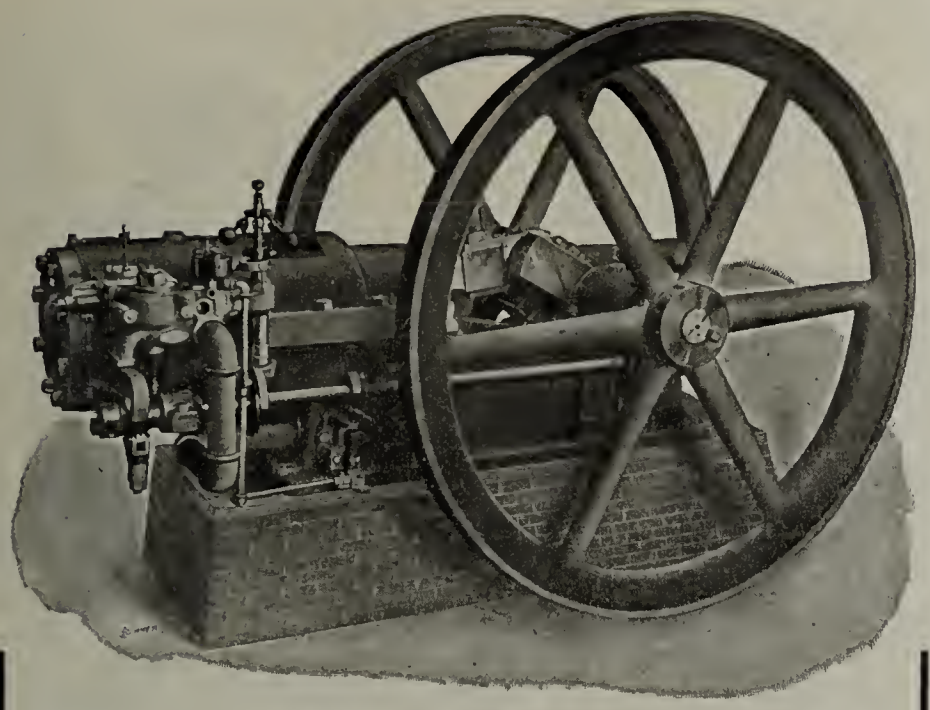

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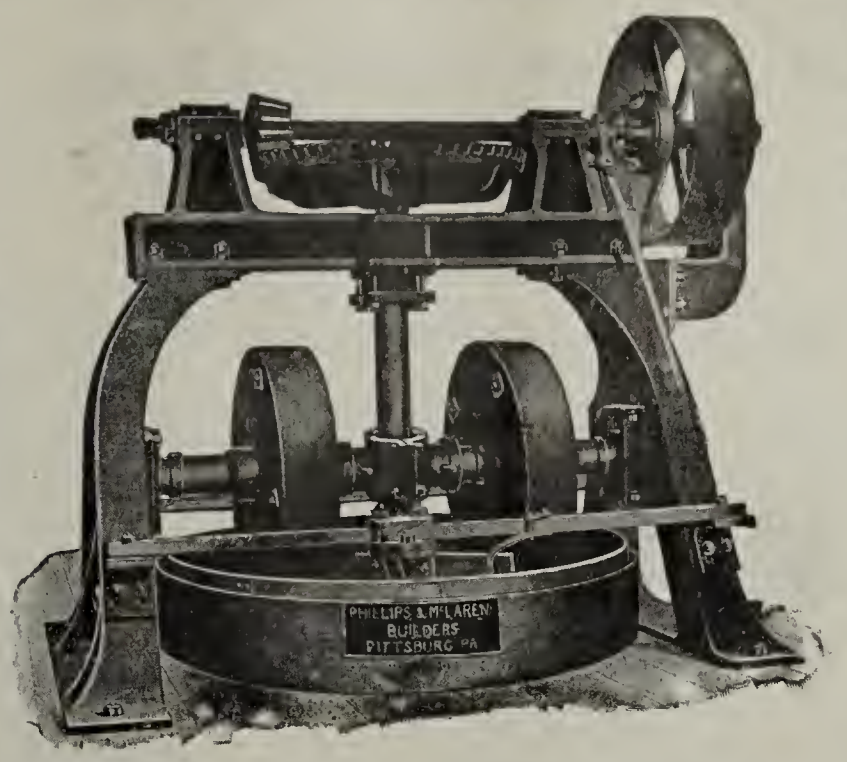

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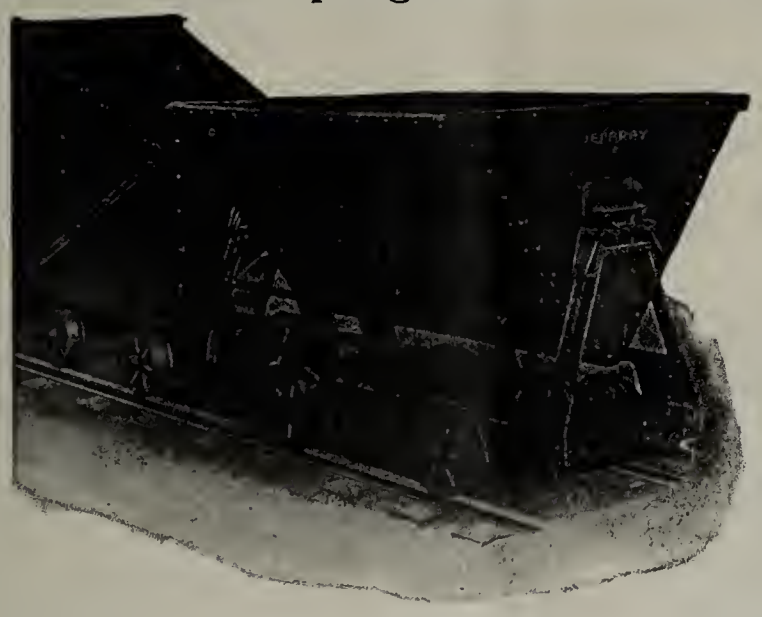

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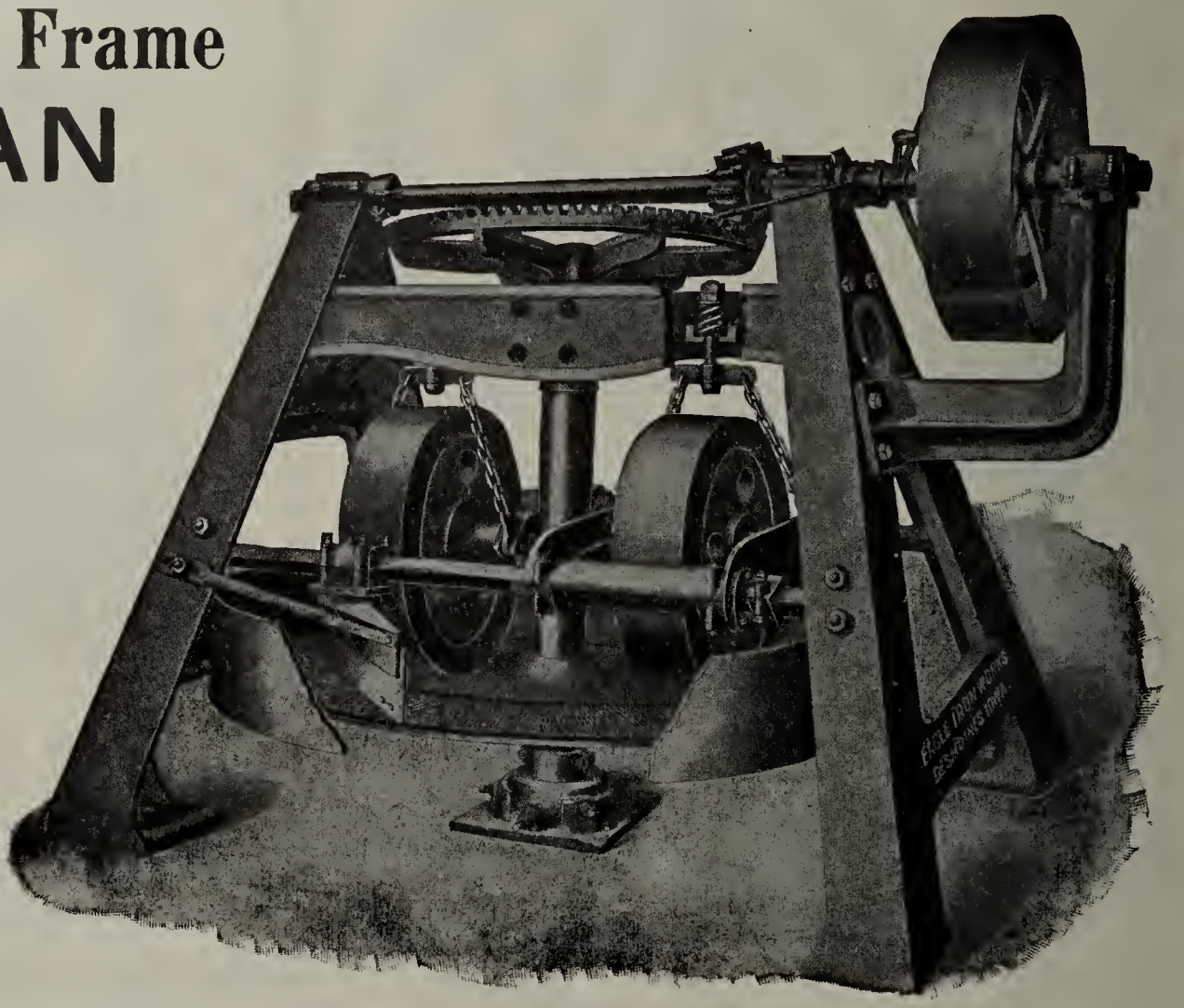

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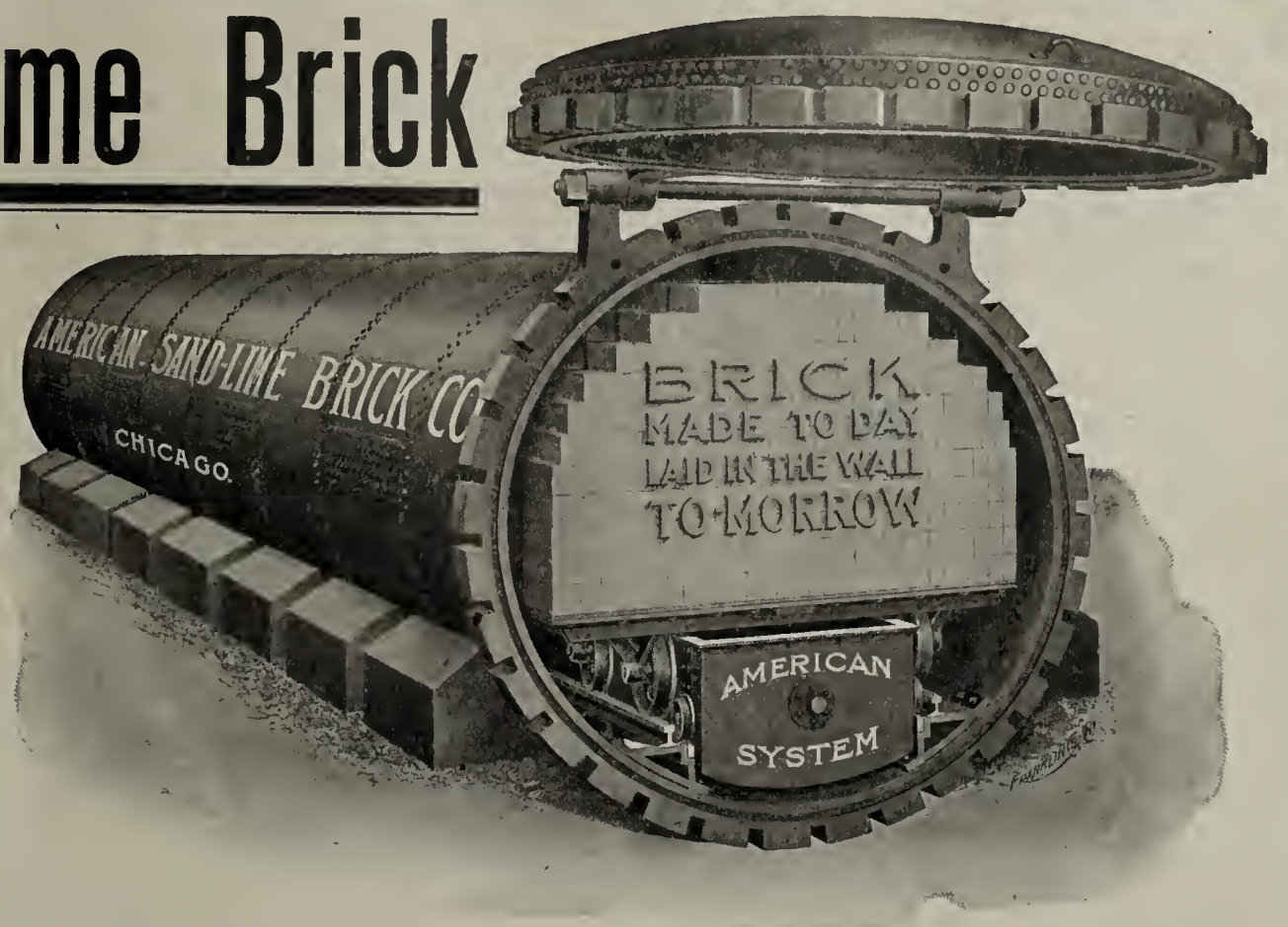

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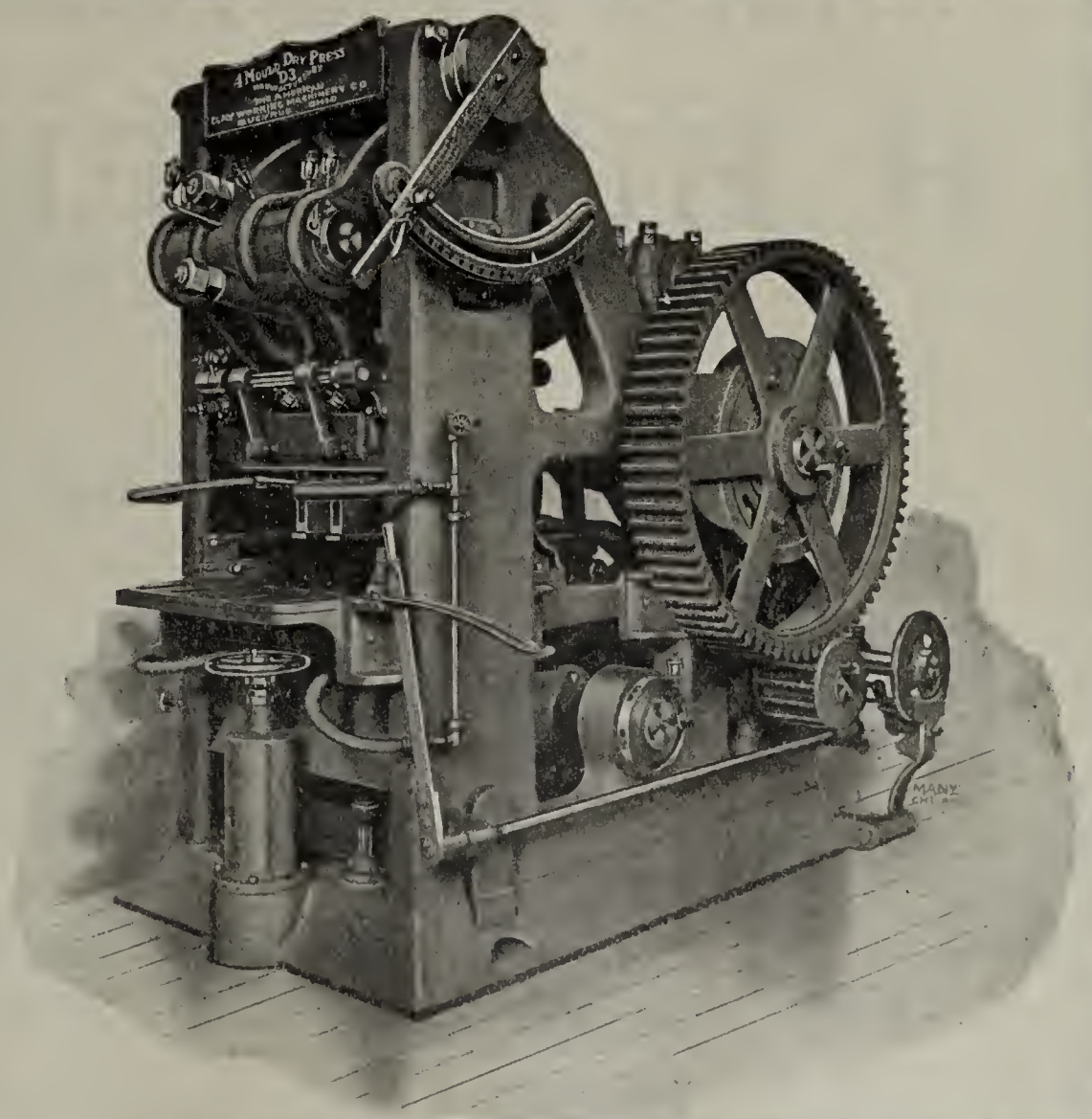
Our Dry Press Machinery has a range in style and capacity to exactly meet the needs of each individual purchaser. Each machine is built of excellent material on massive lines. The construction is most careful and the finished machine is capable of exerting a vast amount of pressure.

All joints carefully fitted. All gearing heavy and strong. Side frames massive. Adjustable mold feed and pressure. Long dwelling pressure. Smoothe, dense, perfect brick.

We build Stiff, Soft Mud and Sand-Lime Brick Machinery, all kinds of Dryers and their equipment. We build all our own Dryers and can guarantee them.



Built Right Run Right

THE

American Clay Machinery Co.

BUCYRUS, OHIO, U. S. A.

Sand-Lime Bricks and Blocks

Machinery and Process

OWNED AND INSTALLED BY

H. HUENNEKES CO.

(INCORPORATED)

Is up-to-date and produces

HIGH-GRADE BUILDING MATERIAL

(SEE OPPOSITE PAGE)

"Huennekes System"

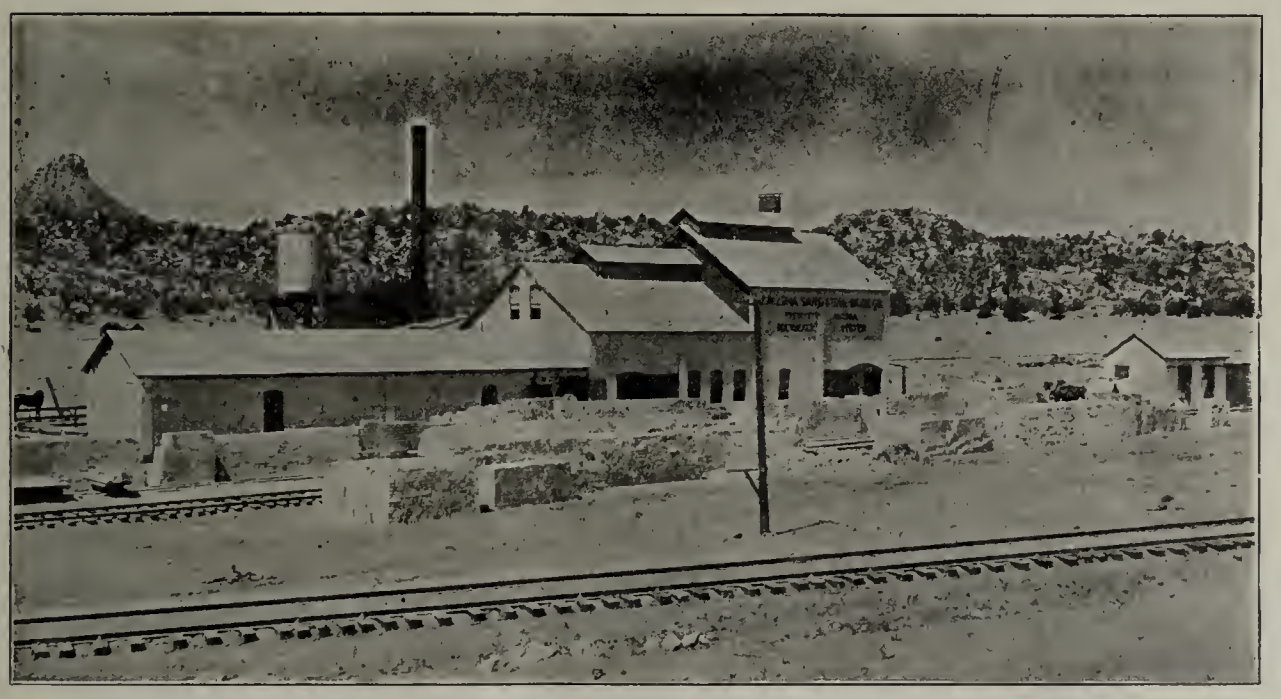
SAND-LIME BRICKS AND BLOCKS

25 Factories Designed, Equipped and Set in Operation During the Past Year in the United States and Canada.

OUR RECORD: Combined capacity of factories in 1903, 15 million bricks per annum.
Combined capacity of factories in 1904, 150 million bricks per annum.

Received from the Jury of Awards at the Louisiana Purchase Exposition the highest award for excellence of sand-lime brick.

U. S. Company's Quarters, Whipple Barracks, Prescott, Arizona, Erected Out of "Huennekes System" Sand-Lime Bricks.



Factory of the Arizona Sand-Stone Brick Company, "Huennekes System" Prescott, Arizona. Finished in Bricks of Their Own Manufacture.

"THINK THIS OVER."

Before the expiration of this year the total combined capacity of the factories erected and operated under the "Huennekes System" will be about 300 million bricks per annum—or a growth of about **2,000 per cent in one year.**

Remember the doubts and scoffings about the **"dry pressed brick"** but a few years ago and the money made by the pioneers in this business.

The Sand-Lime Brick Business is to day in the identical state as the dry pressed brick business was but a few years ago.

All of our special machinery is manufactured in the United States by the foremost machine shops in their particular line of business, and are thoroughly tested, insured and guaranteed before leaving shops. All special machinery, as well as our methods and process are fully protected and covered by United States Patents. **Without the use of the same it has proved impossible to produce a high grade brick out of sand and lime in a commercial way at a low cost. The rapid growth of our business from 15 million brick per annum in 1903 to 150 million brick per annum in 1904** is not only a proof of the merits of the "Huennekes System." but also of the product itself.

Send for free booklet, tests and testimonials.

The original, oldest and only experienced **Engineering Firm** in the Sand-Lime Brick Industry.

H. HUENNEKES COMPANY

Engineers and Contractors for the
Erection of Sand-Lime Brick Factories.

MAIN OFFICES
114-118 Liberty St., NEW YORK, N.Y.

Western Office: 660 Monadnock Building, CHICAGO, ILL.

TALLEST SAND-LIME BRICK BUILDING IN THE U. S.
BRICK MADE ON OUR SAMSON PRESSES.

We are not brokers, but operate
our own foundry and
machine shop.

WE MANUFACTURE

Special Sand Brick Presses
Hardening Cylinders
Sand Mixers
Sand Dryers
Conveying Machinery
Brick Cars, Transfer Cars
Elevators
Steel Castings
Manganese Steel
Cast Iron, Nickel Steel

SEMISTEEL CO.
701 New England Building
CLEVELAND, - OHIO

SEMISTEEL CO.

ENGINEERS AND FOUNDERS

701 New England Building

CLEVELAND, OHIO

Sand-Lime Brick

Plants Erected of any apacity

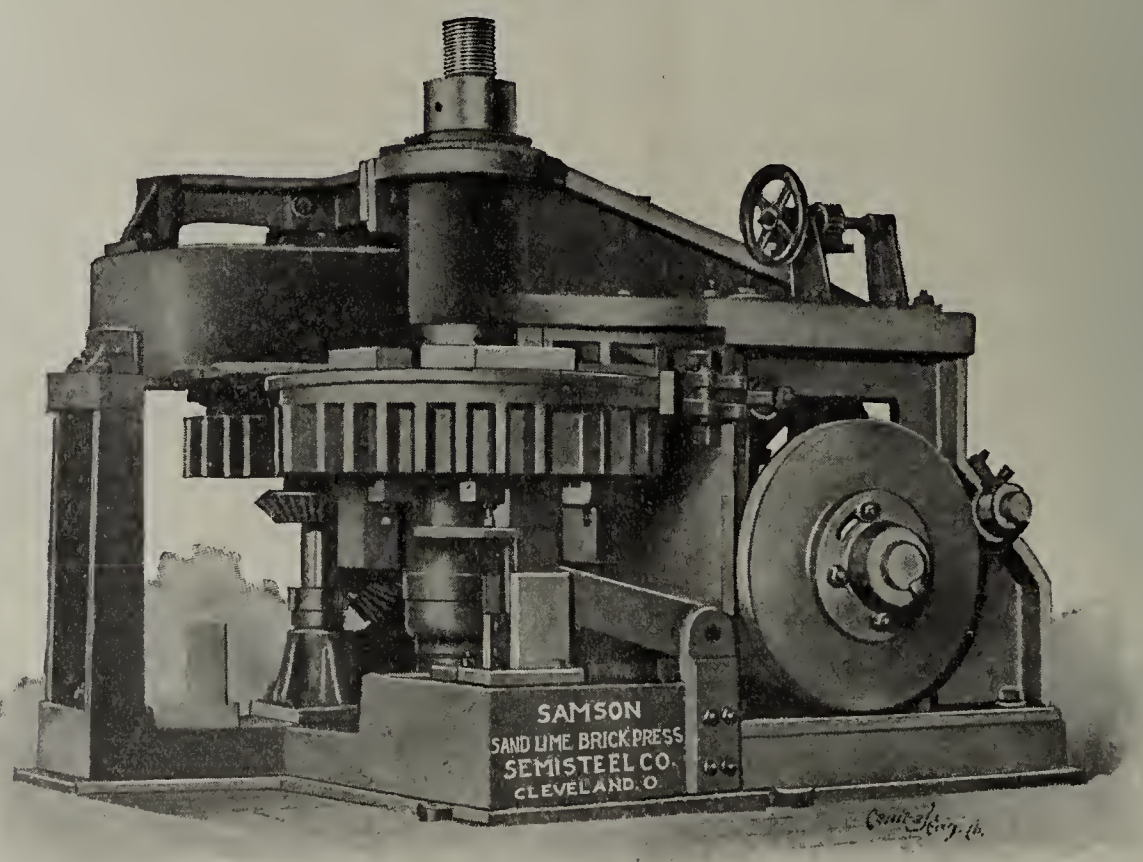
Have you any Sand?

If so, you need what we have.

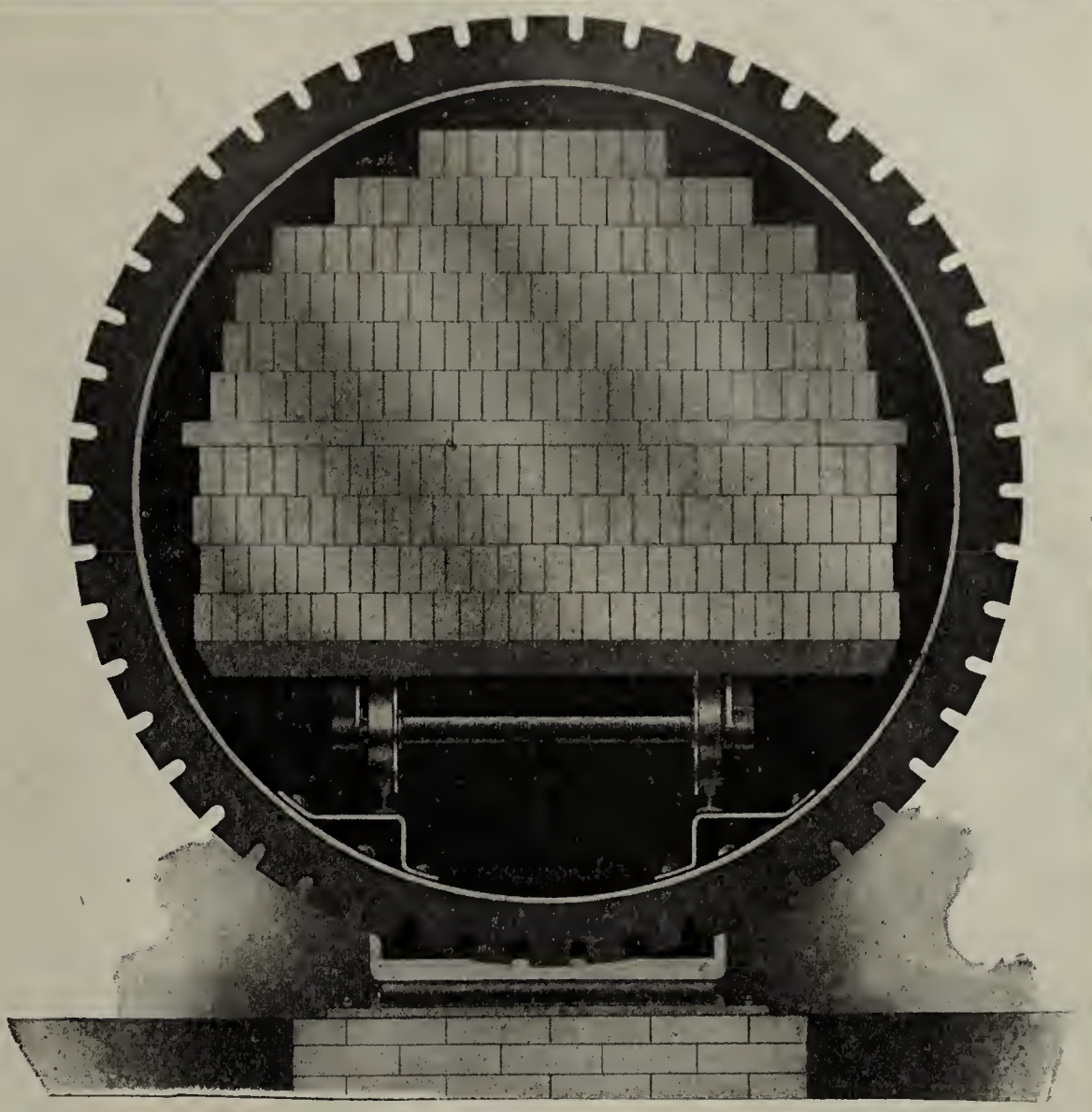
Our System is used by the first Sand-Lime Brick Plant in the United States, and has been in continuous operation and has produced and sold more brick than any other single plant.

Send for information. We have equipped plants in all parts of the United States. We do not use cement or chemicals, and do not sell patent rights.

SEND FOR FREE BOOK.



SAND-LIME BRICK MACHINERY



Our Sand-Lime Brick Machinery is at least a little better than any other. We have testimonials to show it. We build it all in our own factory and are sure of its quality. We are the only firm doing this. We will design and equip your entire plant, or will sell you parts of your equipment. Our catalog, describing and illustrating our full line, will be sent upon request.

We also build a full line of machinery and appliances for making Clay Products, Cement and Pottery, Dryer and Dryer Apparatus.

Everything we sell we make. We therefore know its quality to be right.

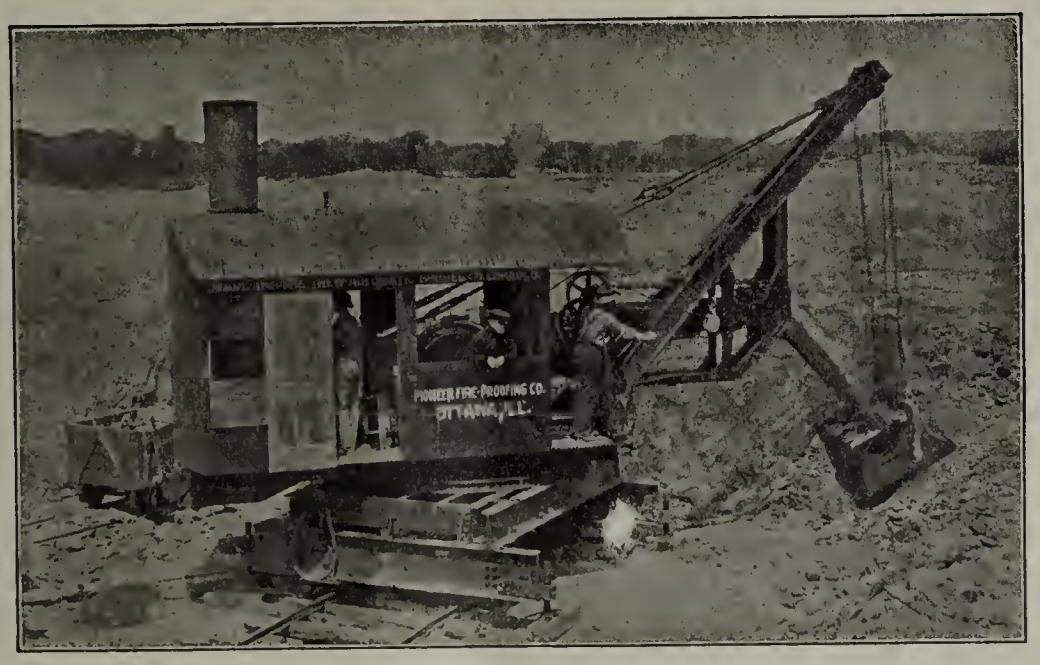
Built Right Run Right

THE
American Clay Machinery Co.
BUCYRUS, OHIO, U. S. A.

HANDLE YOUR CLAY WITH ONE MAN AND

The Thew Steam Shovels

Made In Four Sizes. Mounted on Car Wheels or Traction Wheels.



Type No. 2 Shovel—Pioneer Fireproofing Co., Ottawa, Ill.

Especially adapted for brickyard requirements. The shovel operates in a complete circle, enabling material to be delivered at side or in rear at will. The Dipper is hung from a horizontally moving carriage and can be adiusted to cut to any desired level.

: : Ouly One Operator Required.
Wire Cables used instead of Chains.
Strictly First-Class in Every Detail.

Economical for brickvards 30,000 to 40,000 daily capacity.

Operated by one man for outputs up to 125,000 brick per day.

Write us for Catalogues and Information.

THE THEW AUTOMATIC SHOVEL CO.,
LORAIN, OHIO.

DO YOU KNOW

that Sand-Lime Brick is impervious to the bad effects of heat, cold and moisture? That it can be made in **less than 24 hours** and of absolutely **uniform** quality? IT CAN, when manufactured by our "SCIENTIFIC SYSTEM."

This system absolutely eliminates all guess work in the mixing of materials and brings the entire process under the control of **one common laborer.** It is the **only** system that accomplishes this result.

The machinery of the "SCIENTIFIC SYSTEM" **does not break down.** The press "COLUMBIA" insures the making of a perfectly shaped brick, having a neat, clean and clear cut surface. With this press each brick, independently of the others, receives the entire efficient working force of the press. Again, the bricks are handled in such a way as to avoid pushing, which is the cause of the broken faces and edges to be noticed in bricks made by other types of presses.

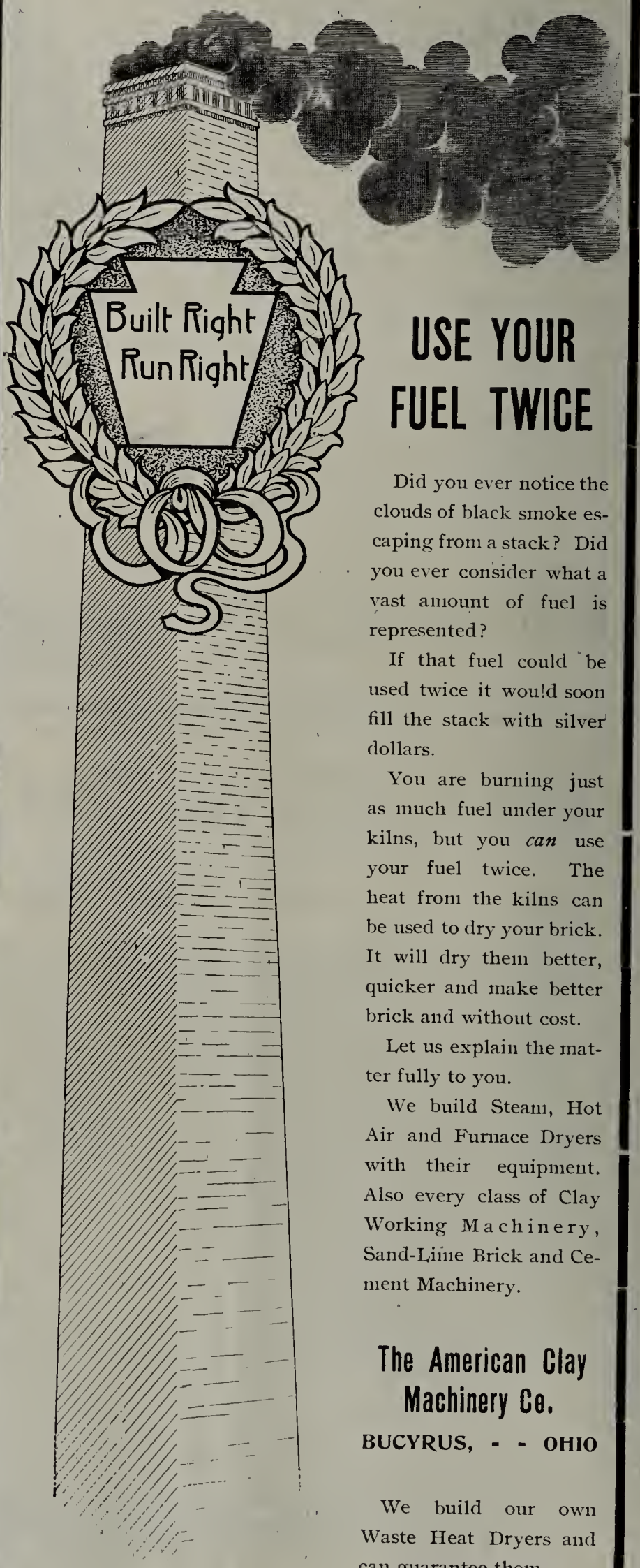
These are only a few of the advantages of our "SCIENTIFIC SYSTEM." We want you to know them **all** and will gladly send full information upon request.

WE equip the Factory.
YOU make the Brick.

SEND FOR CATALOG. SCHWARZ SYSTEM BRICK CO.

320 CROSSLEY BLDG SAN FRANCISCO, CAL. | 24 STATE ST. NEW YORK | 319 ST. JAMES CHAMBERS TORONTO, CAN.

YOUR FUEL USED TWICE



USE YOUR FUEL TWICE

Did you ever notice the clouds of black smoke escaping from a stack? Did you ever consider what a vast amount of fuel is represented?

If that fuel could be used twice it would soon fill the stack with silver dollars.

You are burning just as much fuel under your kilns, but you *can* use your fuel twice. The heat from the kilns can be used to dry your brick. It will dry them better, quicker and make better brick and without cost.

Let us explain the matter fully to you.

We build Steam, Hot Air and Furnace Dryers with their equipment. Also every class of Clay Working Machinery, Sand-Lime Brick and Cement Machinery.

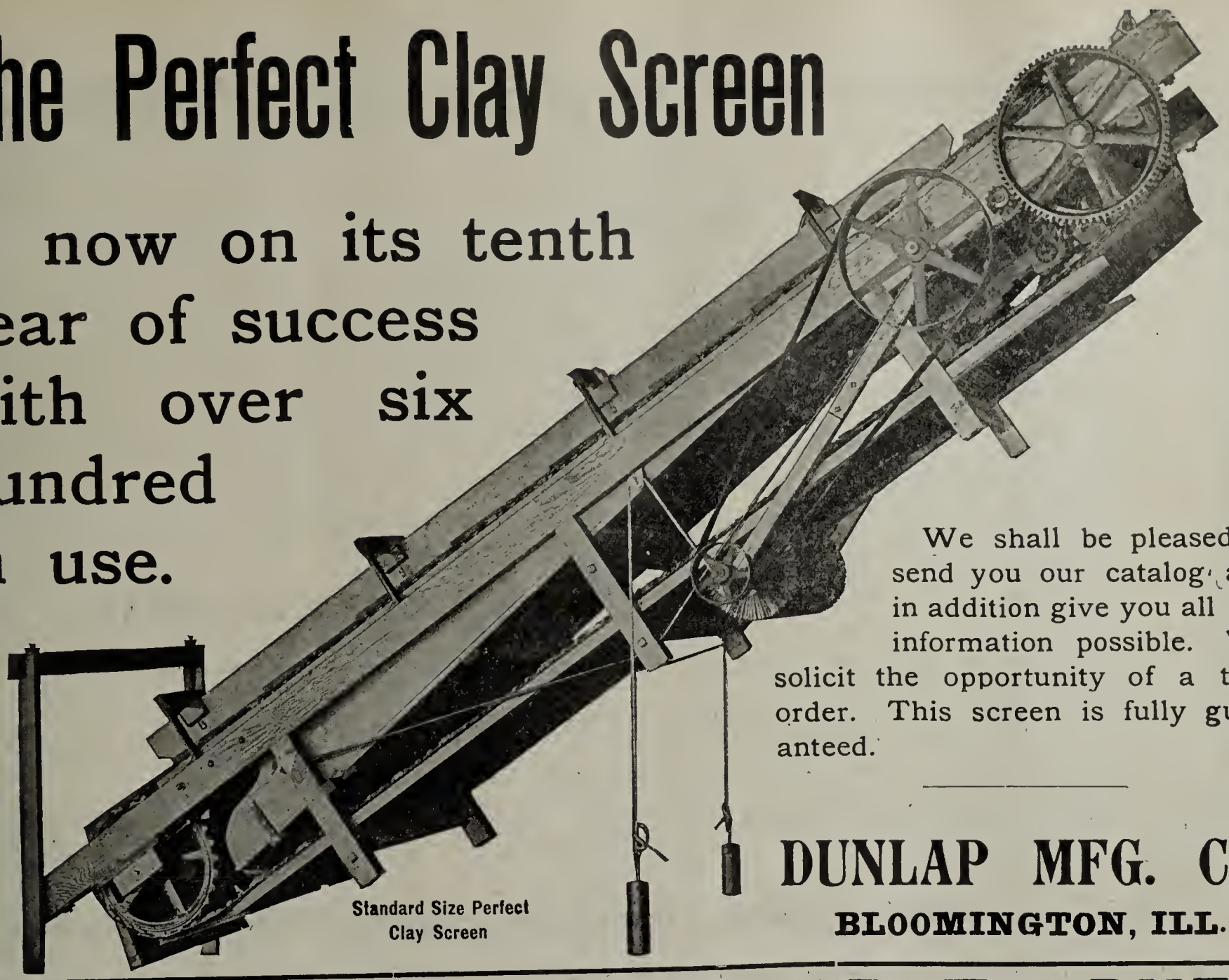
The American Clay Machinery Co.

BUCYRUS, - - OHIO

We build our own Waste Heat Dryers and can guarantee them.

The Perfect Clay Screen

Is now on its tenth year of success with over six hundred in use.



Standard Size Perfect Clay Screen

We shall be pleased to send you our catalog and in addition give you all the information possible. We solicit the opportunity of a trial order. This screen is fully guaranteed.

DUNLAP MFG. CO.

BLOOMINGTON, ILL.

THE NEW YORK BLOWER CO.'S . . . WASTE HEAT DRYER

Has saved more money to brickmakers than any other apparatus.

It is an investment that pays for itself in a short time.

Our apparatus is perfect.

We will investigate any Waste Heat Dryer proposition and make plans and estimates free of charge.

We rebuild any old Dryer into a Waste Heat Dryer at the least possible cost.

We can show a clean record and a long record of Waste Heat Dryers all over the country.

Our Waste Heat Dryers shorten time of burning, save coal, increase capacity, help the color of brick.

Write for our catalogue No. 54 on Waste Heat Dryers.

We also furnish fans for forceddraft on kilns, for water smoking, for hot floors. We furnish steam coils for utilizing exhaust steam. Write us.

Office: Chicago, 25th Place and Stewart Ave.
Works: Bucyrus, O.

NEW YORK BLOWER CO.

Convenient Saving

Saving is generally **inconvenient,** owing to the fact that it necessitates **doing without.**

Saving **Waste Heat** is **convenient** saving, for the reason that it only requires **doing with.**

With it dry your brick and your yearly income will be greatly increased without inconvenience.

Save Conveniently

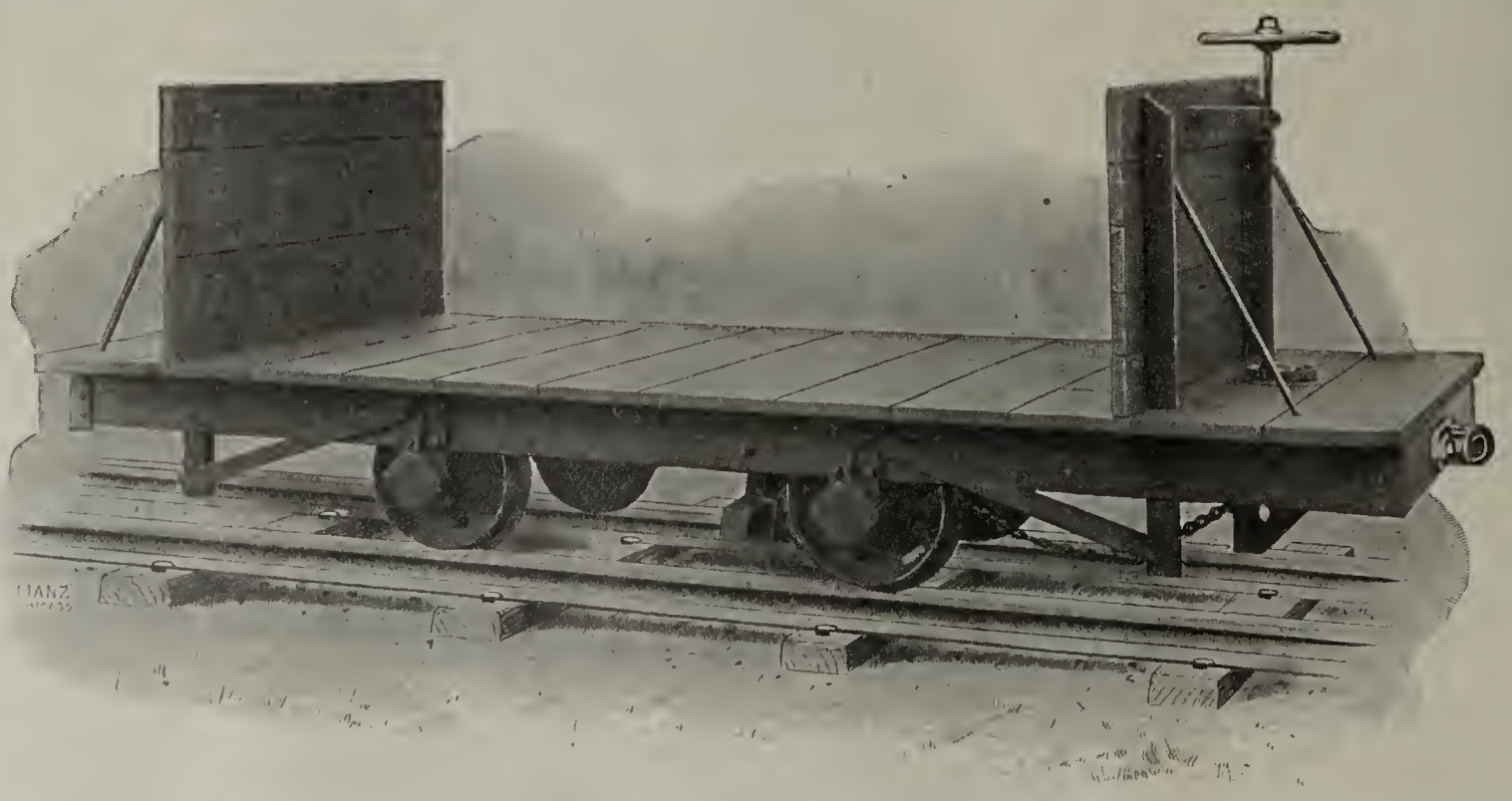
L. E. RODGERS ENGINEERING CO.

WASTE HEAT DRYER SPECIALISTS

303-305 Dearborn Street, *CHICAGO*

DRY CARS, DUMP CARS, TRUCKS, ETC.

We build a complete line of Dry Cars, Dump Cars, Turn Tables, Barrows and Trucks. In fact every machine and apparatus used in the manufacture of Clay Products, no matter by what process. We have built an addition to our car factory, doubling its capacity. Quality of product has made this necessary. Quality and prompt shipment should interest you. Write for information.
Remember we build our own Waste Heat Dryers and can guarantee them.



Built Right Run Right

THE AMERICAN CLAY MACHINERY CO.

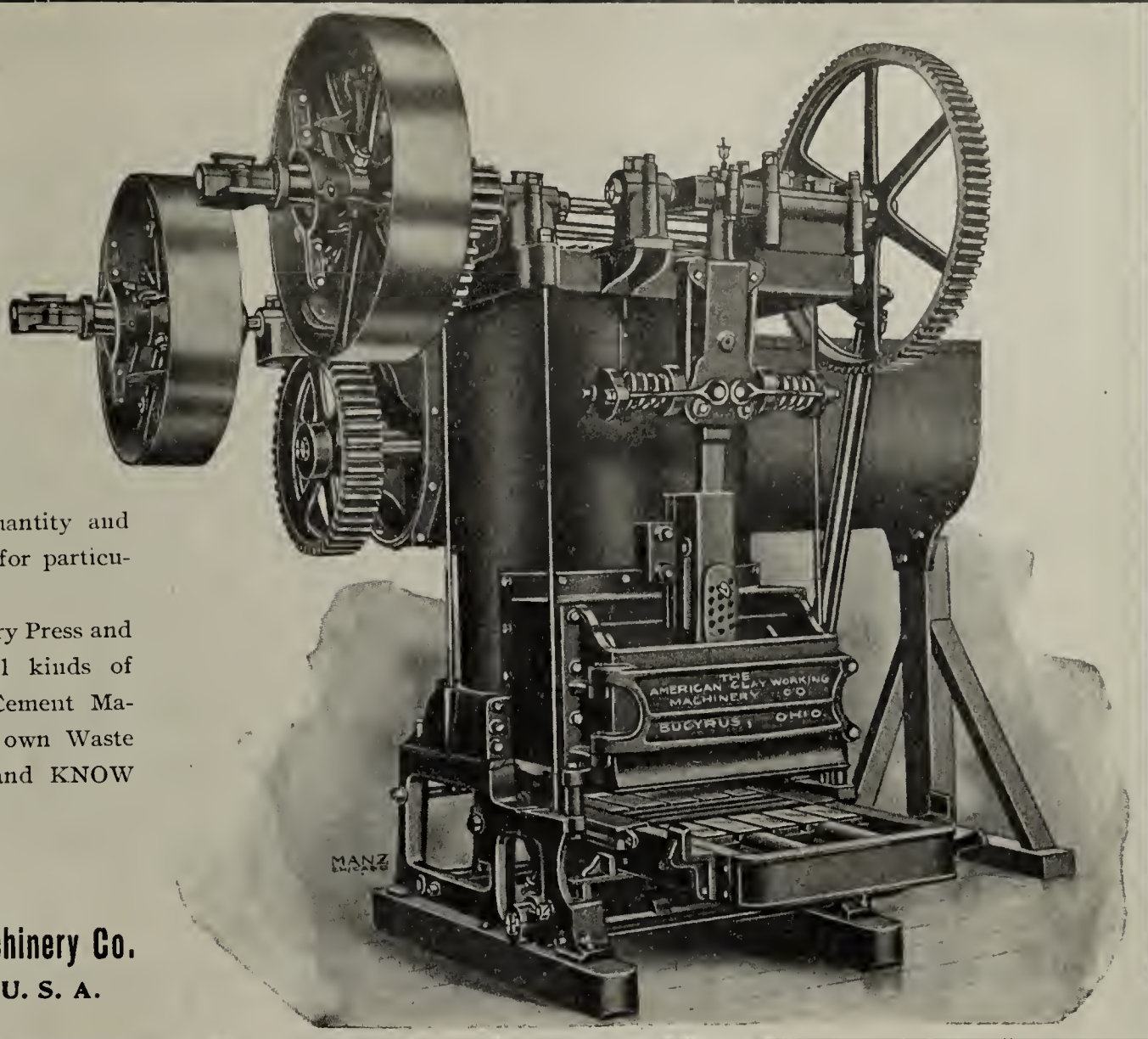
BUCYRUS, OHIO, U. S. A.

SOFT MUD BRICK MACHINERY

Our Soft Mud line of Machinery and Appliances is complete from Molds to Full Outfits. Design superior. Material flawless. Workmanship faultless. From smallest capacity to greatest our Machines will give complete satisfaction.

If quality of Machinery and quantity and quality of Brick interest you, write for particulars and catalog.

We build Soft Mud, Stiff Mud, Dry Press and Sand-Lime Brick Machinery. All kinds of Dryers of Quality. Pottery and Cement Machinery. Remember we build our own Waste Heat Dryers in our own shops and KNOW their quality to be the best.



Built Right Run Right

THE
American Clay Machinery Co.
BUCYRUS, OHIO, U. S. A.

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By Thomas W. Barber, C. E. A hand book of practical notes and memoranda for engineers and machinery users, 166 pages—417 illnstratlons—8 vo., cloth..... .....$3.50

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By Ernst Stoffler. Treats on the formation of artificial brick made from a mixture of lime and sand under the influence of moisture. Raw materials, methods, manufacture. Shows outline drawlng of factories, elevations to detail. Ground plans and Sectional Elevations, price.....$1.00

Brick, Tiles and Terra Cotta
A practical treatise on the making of hand made, soft mud, stiff clay, dry press, paving brick, enameled brick, fire brick, silica brick, terra cotta, drain tile, roofing tile, art tile, with a description of modern machinery, 662 pages—261 engravings—8 vo., cloth.....$10.00

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Containing the papers and discussions of the society. The most complete information published. 5 vols. Price, each.$4.00

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This book was compiled with great care and most complete. Price $1.00

Will be sent postpaid on receipt of price.

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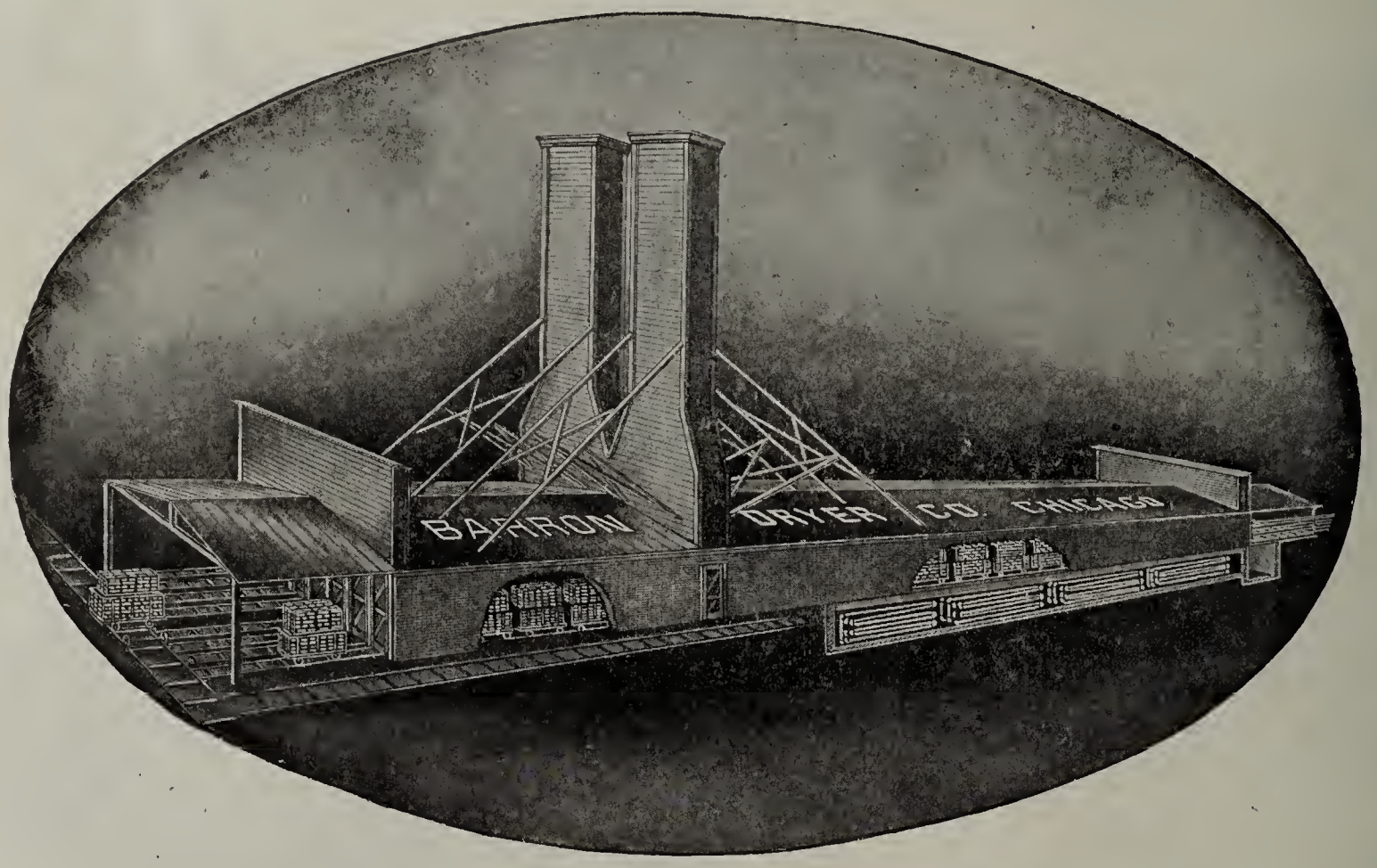


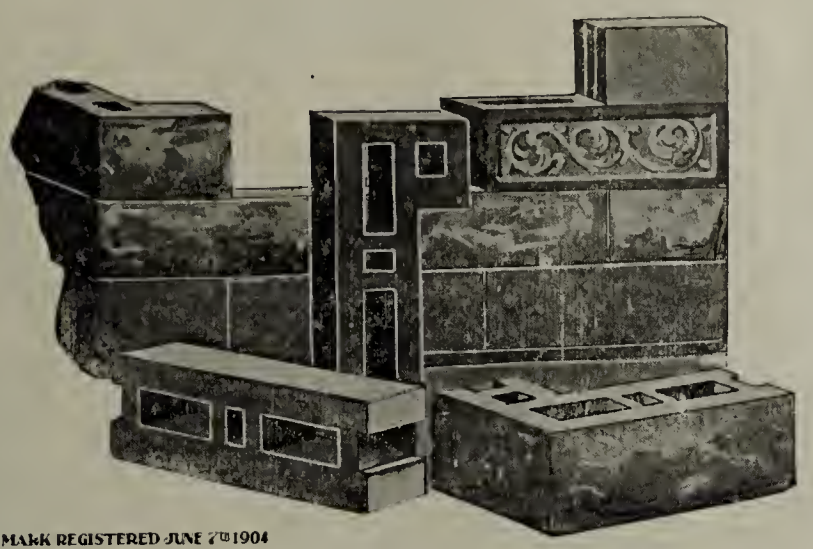
If You Are Progressive

You know that the brickmakers who are making the money in these days are those who have installed an up-to-date drying system enabling them to cope with ease with the heaviest demands of the market, their operations being uninterrupted all the year round.

This is true of them, what of your case? Why adhere still to antiquated methods subjected to weather limitations. Determine to install the most effective drying system in existence and apply for information and quotations to the

BARRON DRYER COMPANY

Temple Court Building, 225 Dearborn Street, CHICAGO, ILL.



TRADE MARK REGISTERED JUNE 7th 1904
BY HARMON S. PALMER HOLLOW CONCRETE
BUILDING BLOCK COMPANY.

PALMER'S MACHINE

IT IS THE BEST BY EVERY TEST

ALL OF THESE POINTS ARE COVERED BY PATENTS TO US AND NO OTHERS. FOUR PARTIES HAVE ALREADY BEEN ENJOINED BY US IN UNITED STATES COURTS FOR INFRINGING OUR PATENTS.

BECAUSE:

It makes all lengths from **four** to **thirty-two** inches.

It makes all widths from **four** to **eighteen** inches.

It makes all heights from **one** to **nine** inches.

It makes all angles for **bay-windows.**

It makes blocks of different contour by removable face plates with patented designs.

It makes **joist** blocks and **nelting-courses.**

It was invented by a **practical** builder who knew what was necessary.

Its proportion as to strength and weight are correct.

It is not a cumbersome and bungling piece of mechanism.

Every block necessary to complete system of construction made by Palmer's machine. No waste.

Don't be deceived into buying a machine just because it makes a hole in a block. This is like poison to our business.

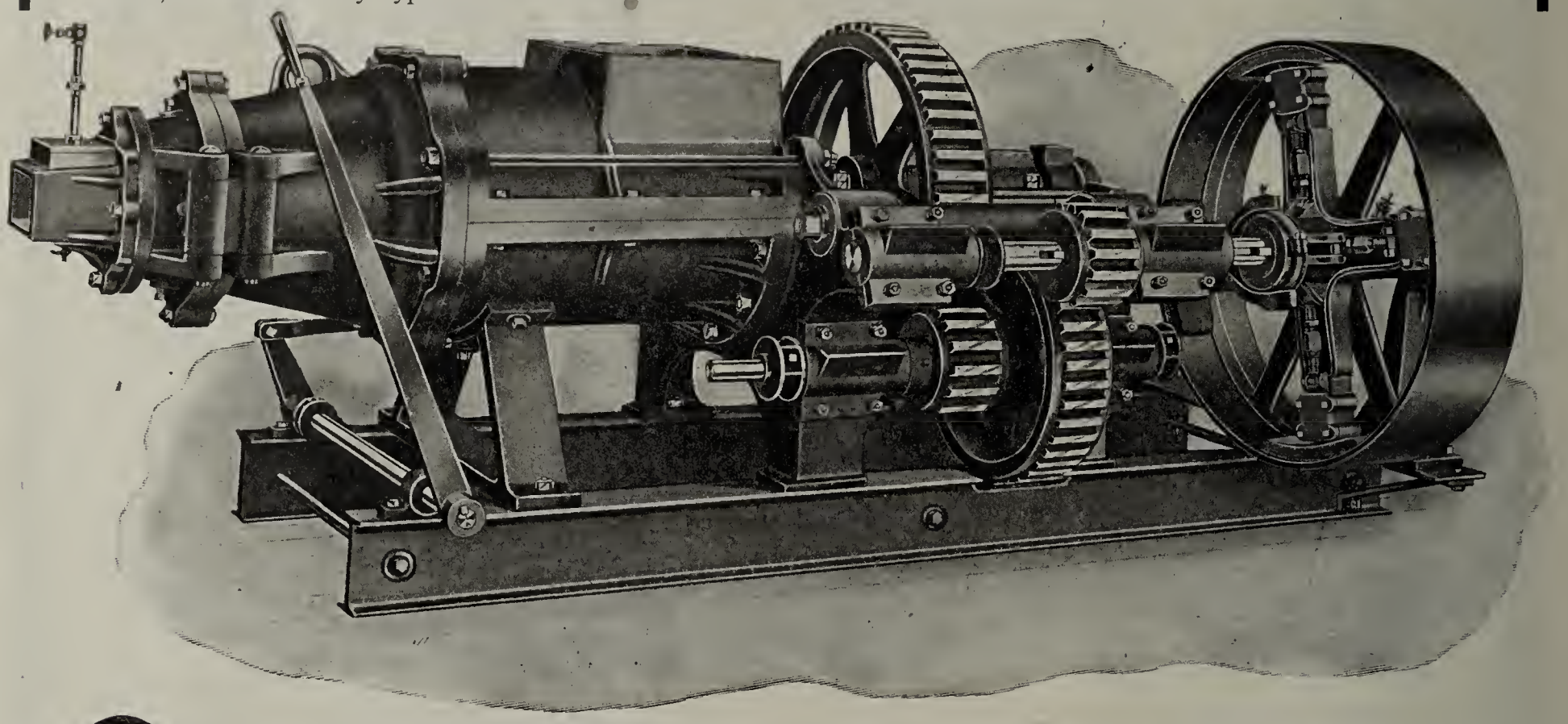
Beware of charlatans and mountebanks who know nothing of the business, but want the public's money on the reputation and success of others.

THE HARMON S. PALMER COMPANY

WASHINGTON, D. C.

STIFF MUD BRICK MACHINERY

This is our No. 2 Giant. It is equipped with Steel "I" Beams, One-Piece Gear Frame, Heavy Reinforced Flanges, Hinged Die Front, Special Iron in Auger and Knives, Steel Pinions, Shrouded Gearing with Covering, Steel Shafting, Independent and Removable, Set Nuts of Safety Type.

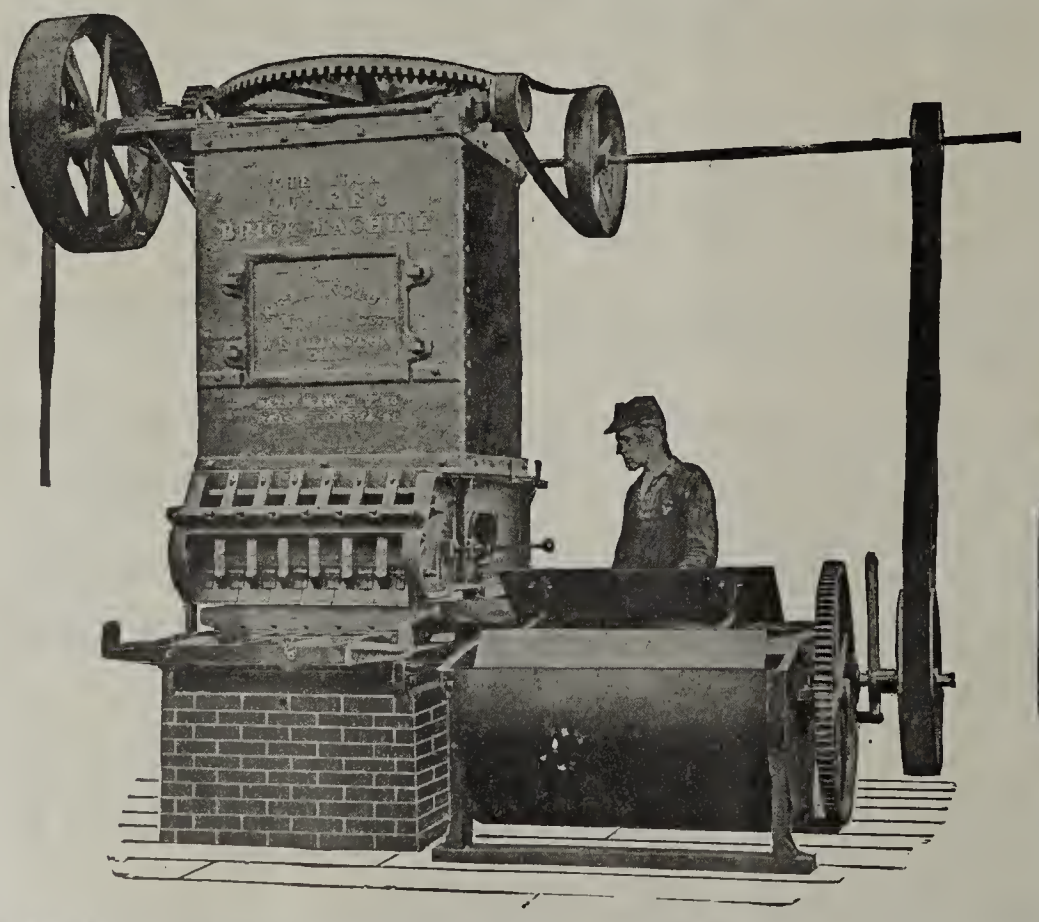


Built Right Run Right

We build other machines, larger and smaller capacity, same quality. We build everything needed to make clay products. Also Dryers that we can guarantee. Write for catalog.

THE AMERICAN CLAY MACHINERY CO.
BUCYRUS, OHIO

THE NEW IRON STEAM POWER "QUAKER"

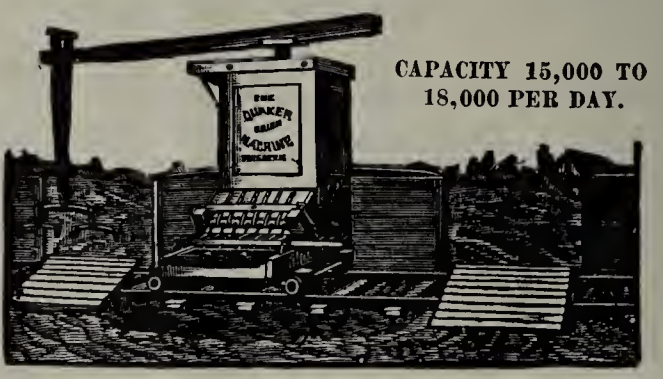


Over 500 "Quakers" in use, both Horse and Steam Power, now made entirely of Iron and Steel. I have the best, simplest and cheapest Mould Sanding Machine on the market. With my Roller-Bearing Brick Barrows you can wheel 15 per cent. more brick and do it as easily. Order one subject to approval.

ALL OTHER SUPPLIES.

Send for Catalogue.

The BEST for the least money.



CAPACITY 15,000 TO 18,000 PER DAY.

The **NEW IRON HORSE-POWER QUAKER** is indeed a model machine; it is the best machine for equipping small yards at a moderate expense that has ever been put upon the market. It is built for the attachment of steam gearing whenever desired.

It will pay you to see my new catalogue before placing your order.

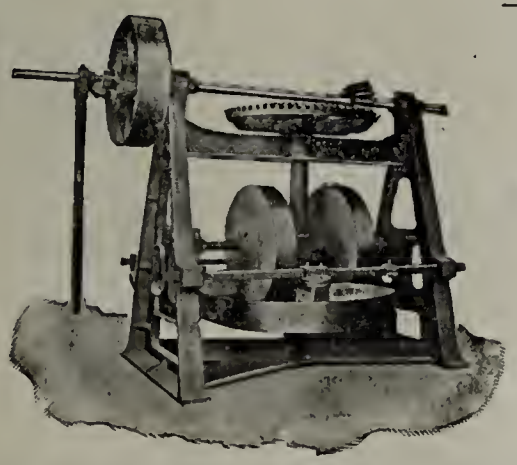
JAMES W. HENSLEY, Successor to S. K. FLETCHER, **Indianapolis, Indiana.**

W. L. KIDNEY, Sales Agent, Capetown, South Africa.

The
"Martin"
Stock
Brick
Machine
STYLE "A"

Send for Photographs of Remodeled Brick Plants using "MARTIN SYSTEM" Handling and Drying Common Building Brick

SEND FOR ILLUSTRATED CATALOGUE



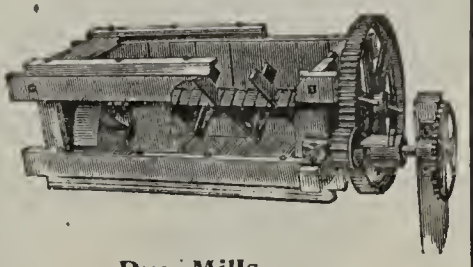
Dry or Wet Pans.

THE HENRY MARTIN BRICK MACHINE MFG. COMPANY,

INCORPORATED
CLAY WORKING ENGINEERS

LANCASTER, PA.
U.S.A.

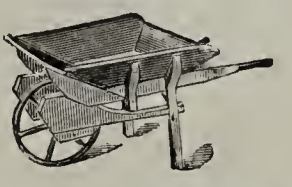
SUPPLIES



Pug Mills

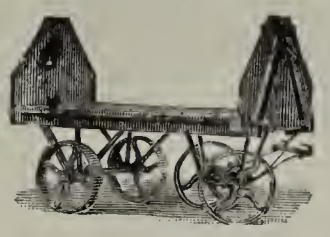
Green or Burned Brick Barrow

Single Deck Spring Truck



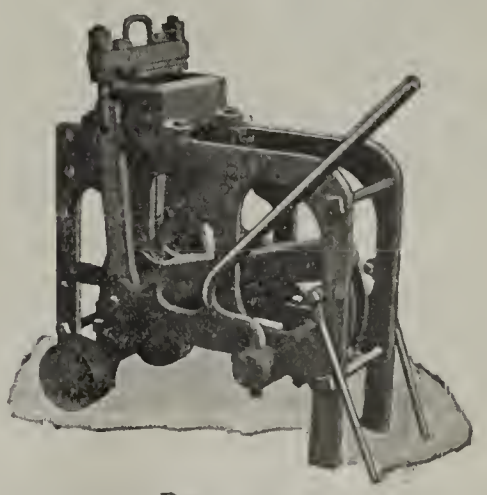
Mud or Dump Barrow

Double Deck Spring Truck



Mole Truck

We Furnish Everything A Brickmaker Needs



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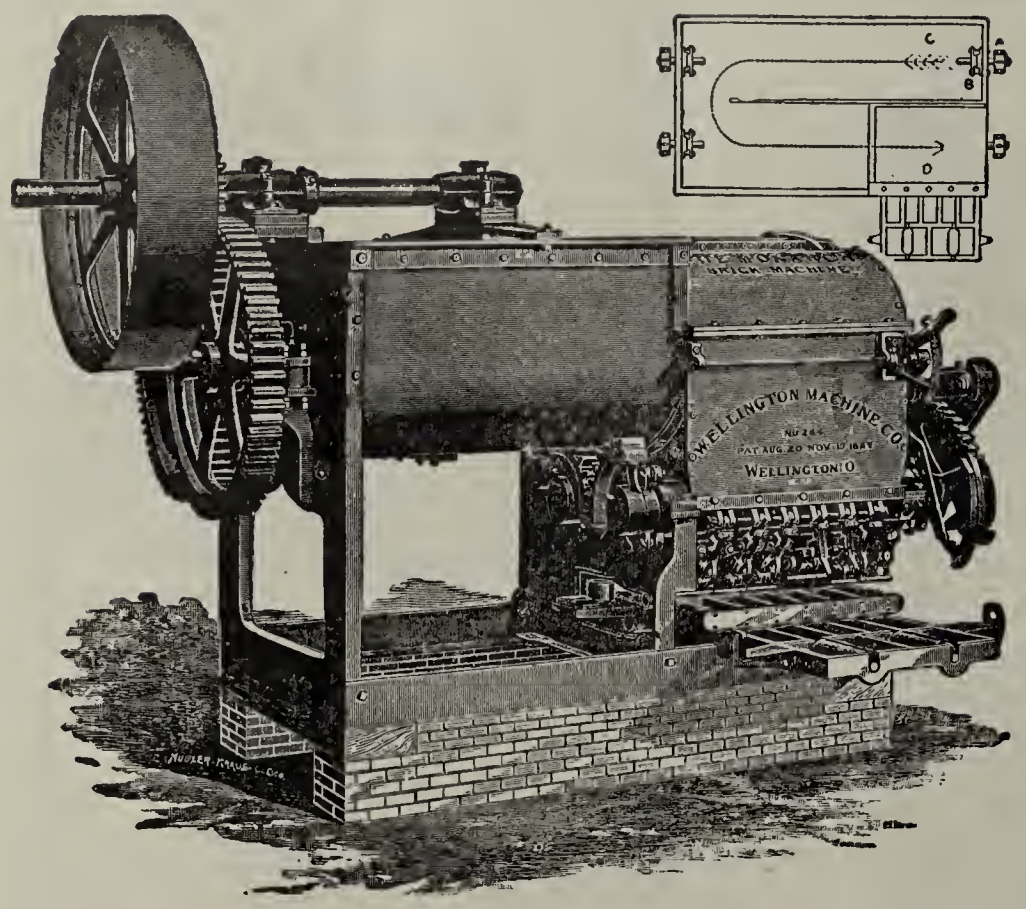
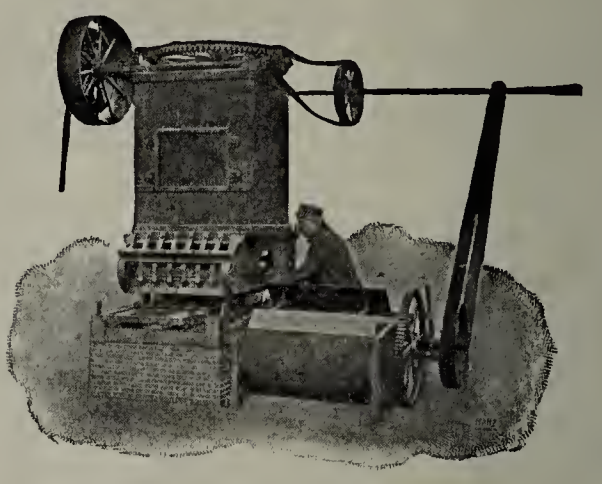
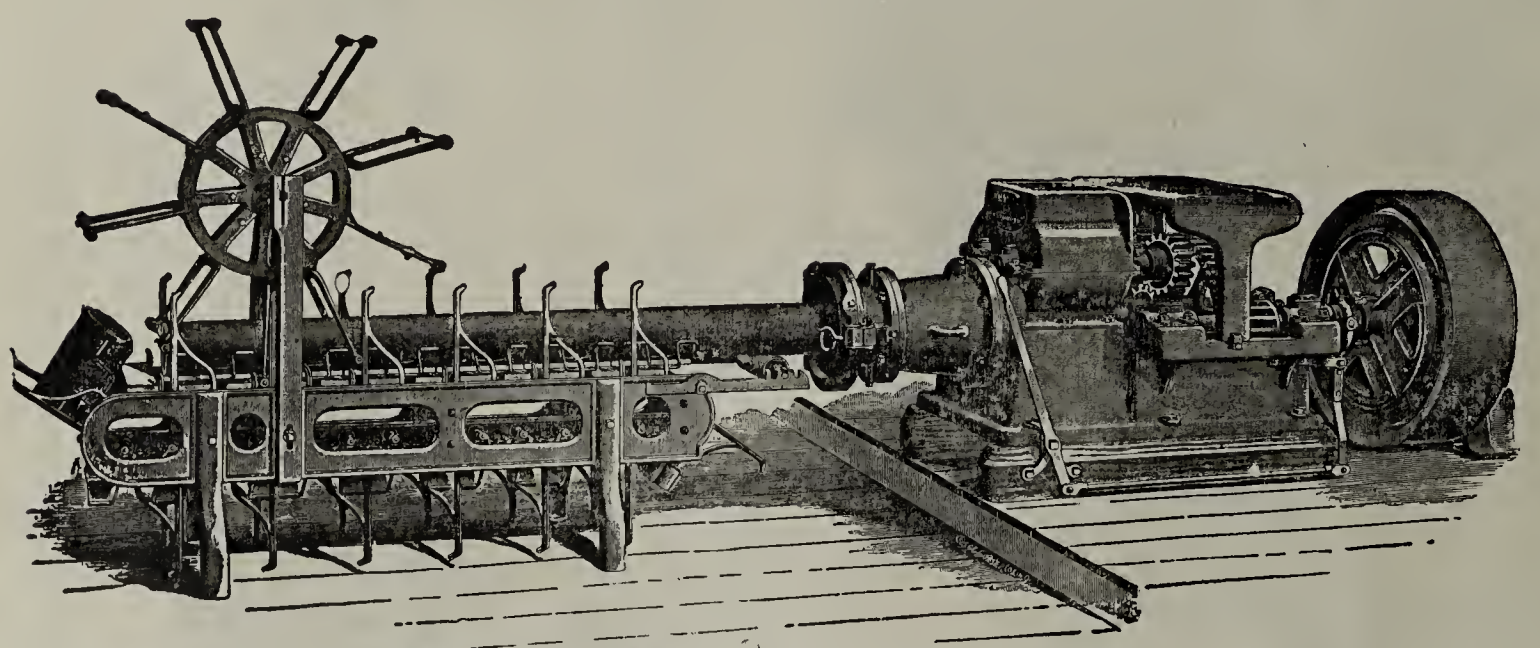


MONARCH STOCK BRICK MACHINE
Capacity, from 30,000 to 50,000

BRICK and TILE MACHINERY

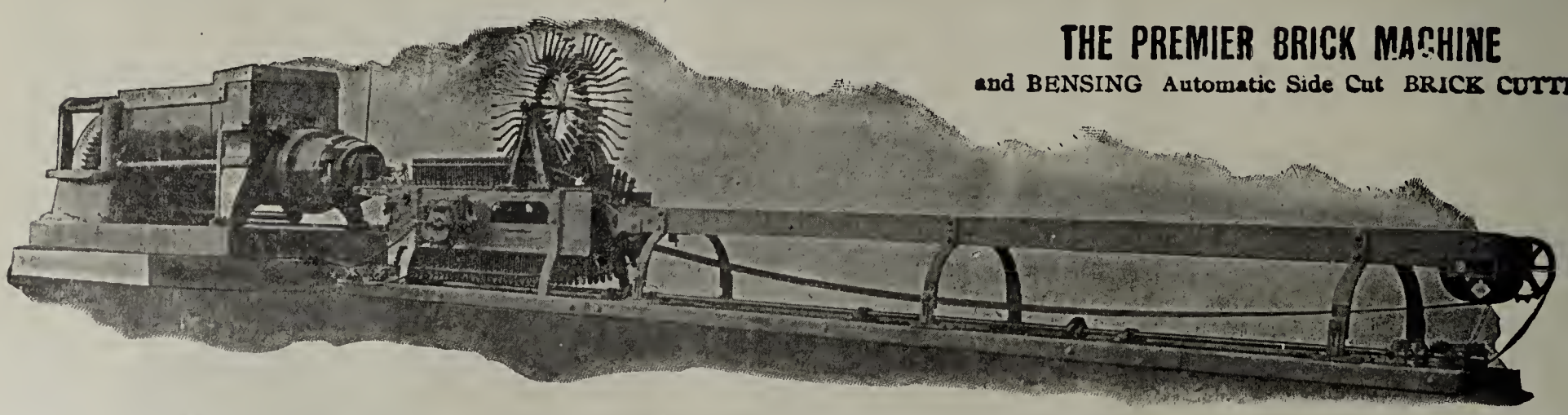


THE QUAKER
Horse or Steam Power. Capacity, 20,00 to 35,000



BRICK OR TILE MACHINE, WITH AUTOMATIC TABLE

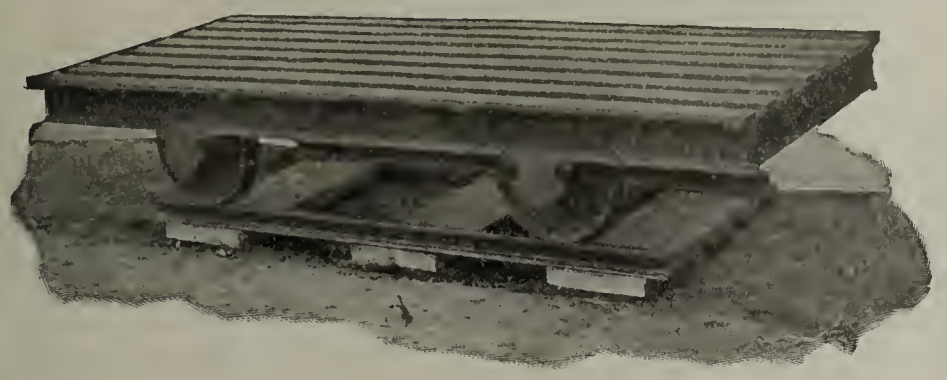
"We Fulfill our Guarantees."



THE PREMIER BRICK MACHINE
and BENSING Automatic Side Cut BRICK CUTTER

We have a full line of Clay-Working Machinery, sand mold brick machines, auger brick and tile machines, Automatic side and end cut tables, dies, molds, barrows, trucks, sanders, represses, pug mills. *The only down cut, reel side brick cutter on the market for cutting face brick that do not require repressing.* We can guarantee to make you a better face brick with this cutter than you can get from any other cutter on the market.

B. E. LaDOW, 701 Dwight Building, KANSAS CITY, MO.



No. 212.
STEEL DECK CAR, CHANNEL FRAME.
For Drying Brick, Sewer Pipe, Etc.

No. 207.
FLAT CAR, WOODEN DECK.
For Brick, Tile, Etc.

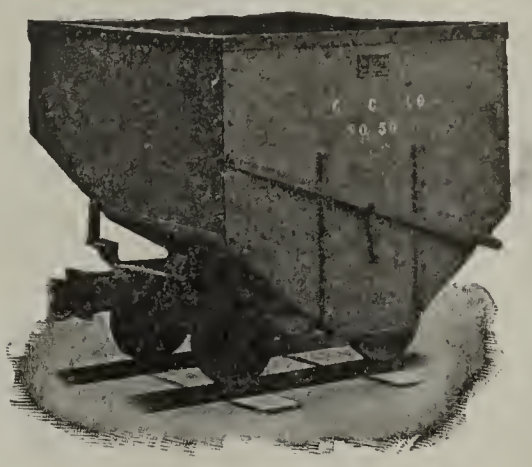
No. 52.
TRUNION DUMP CAR.
For Handling Coal, Sand, Ashes, Etc.

The Cleveland Car Company

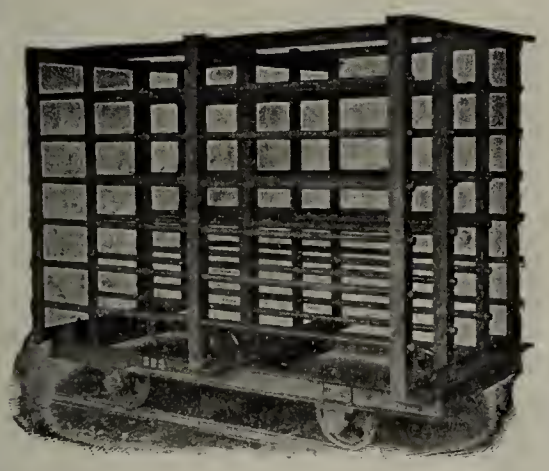
West Park -:- Ohio

Designers and Builders of

Complete Equipment for Narrow Guage Railroads



No. 50.
ONE SIDE DUMP CAR.
For Dumping Into Dry Pans, Disintegrators and Crushers.



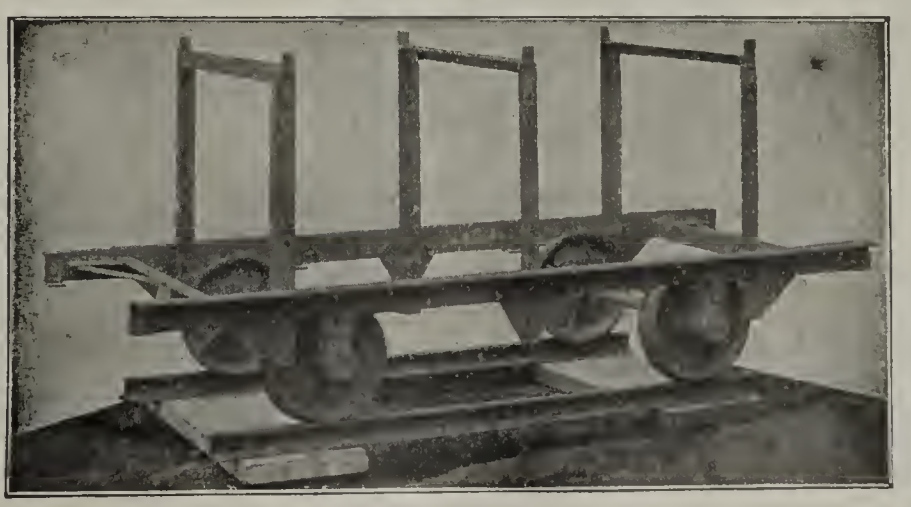
No. 523.
RACK CAR, HEAVY TYPE.
For Use With Coke Oven, Furnace and Cupola Block.

Dryer Cars of Every Description, Dump Cars, Turn Tables, Transfer Cars, Switches, Frogs, Rails, Etc.

Overhead Trolleys, Kiln Doors, Furnace Fronts, Grate Bars and Brick Barrows : : : :

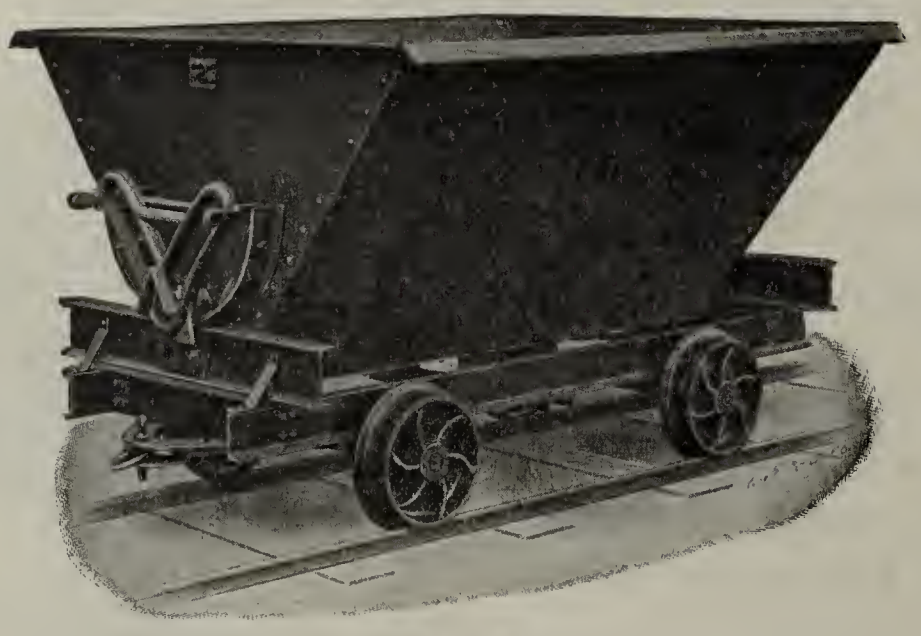
No. 31.
END DUMP CAR.
Adapted to Handling Coal, Shale, Sand, Etc.

No. 244.
DOUBLE DECK CAR, STEEL DECKS.
For Brick, Tile, Fire-Proofing, Etc.



No. 245A.
DOUBLE DECK CAR, WOODEN DECK.
For Brick and Other Clay Products.

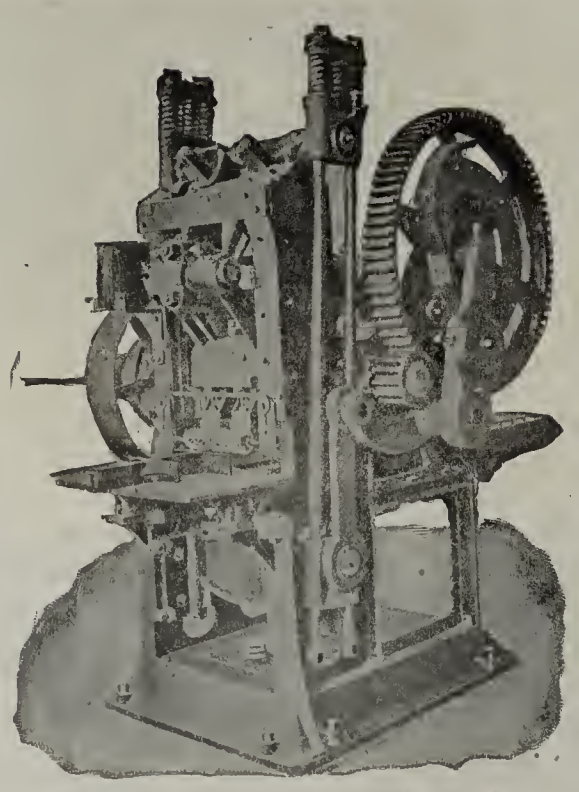
Are Your Clay Cars Satisfactory?



Clay Car.

If not, we can send some which we guarantee will be. They have no chains or pins to get lost or broken, cars cannot overdump, are self-locking, self-centering, easy running and durable.

We also build dryer cars of all kinds for all purposes.



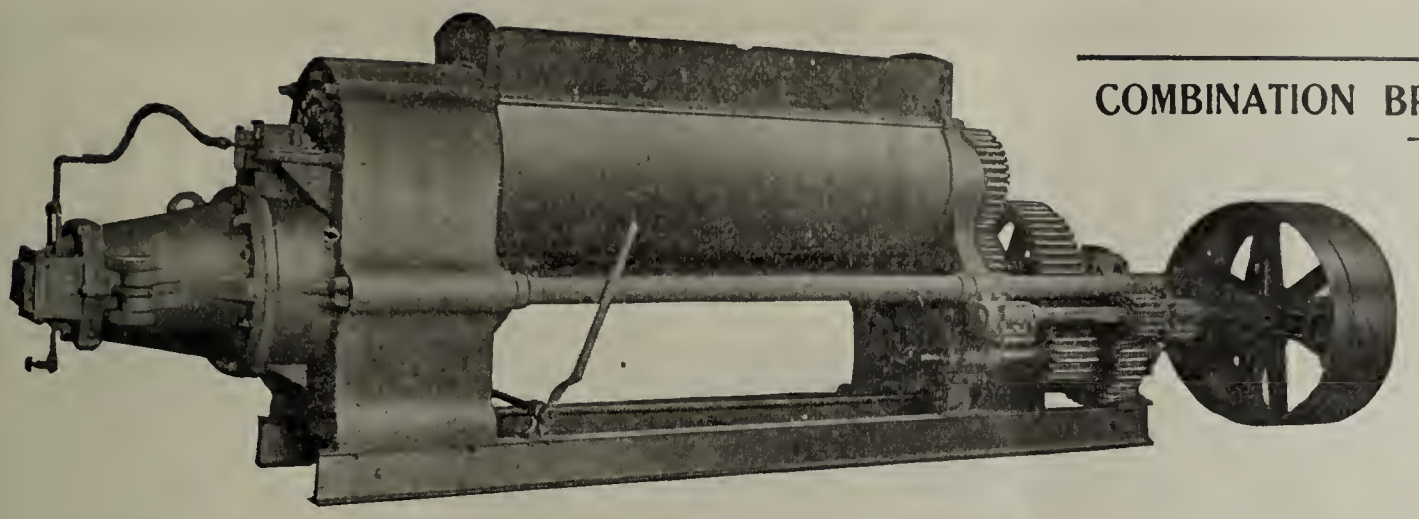
Richardson Double Die Repress.

The Richardson Repress has all the features of merit that are demanded of a machine of this kind. Has enough depth of mold to make the largest size paving brick. All the working parts are above dies out of the way of waste clay. It has a slow pressing movement with double pressure, bringing out distinctly all markings and lettering. The working parts are adjustible to wear. It requires very little power and costs little to keep in repair.

Kindly write us for catalogs and full information.

The Ohio Ceramic Engineering Company

50-56 Fall Street, Cleveland, Ohio.



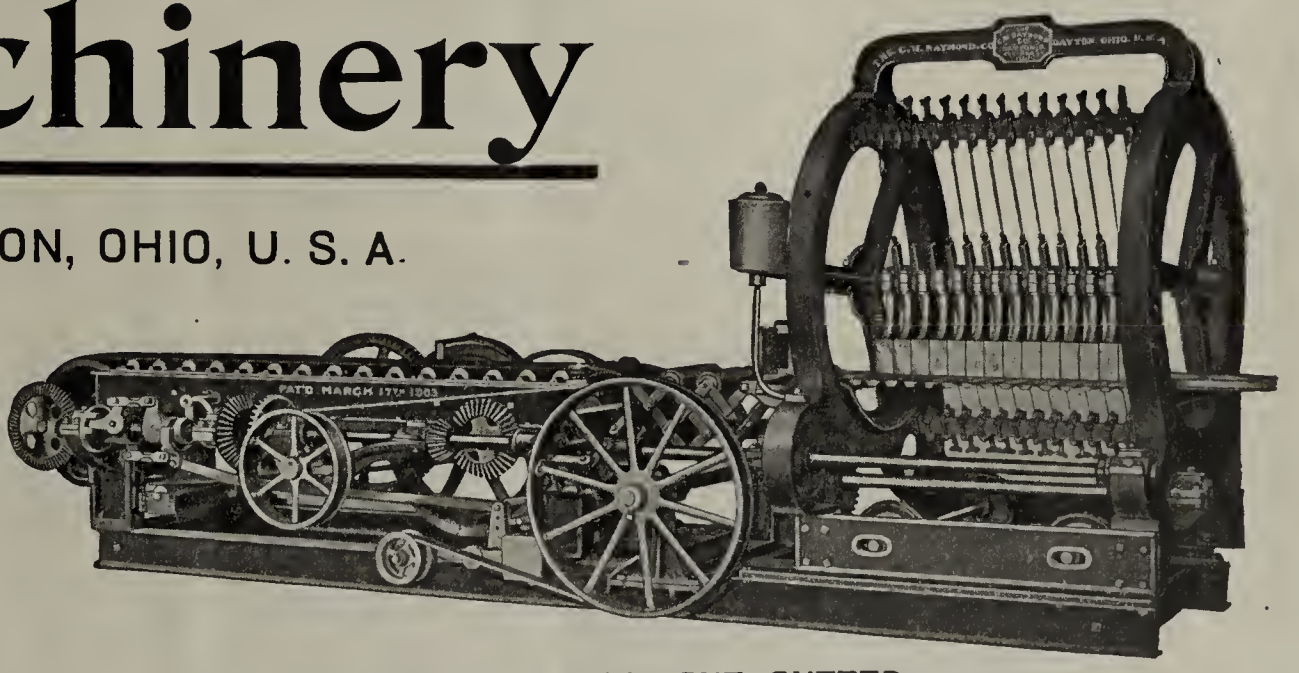
COMBINATION BRICK MACHINE

THE C. W. RAYMOND CO

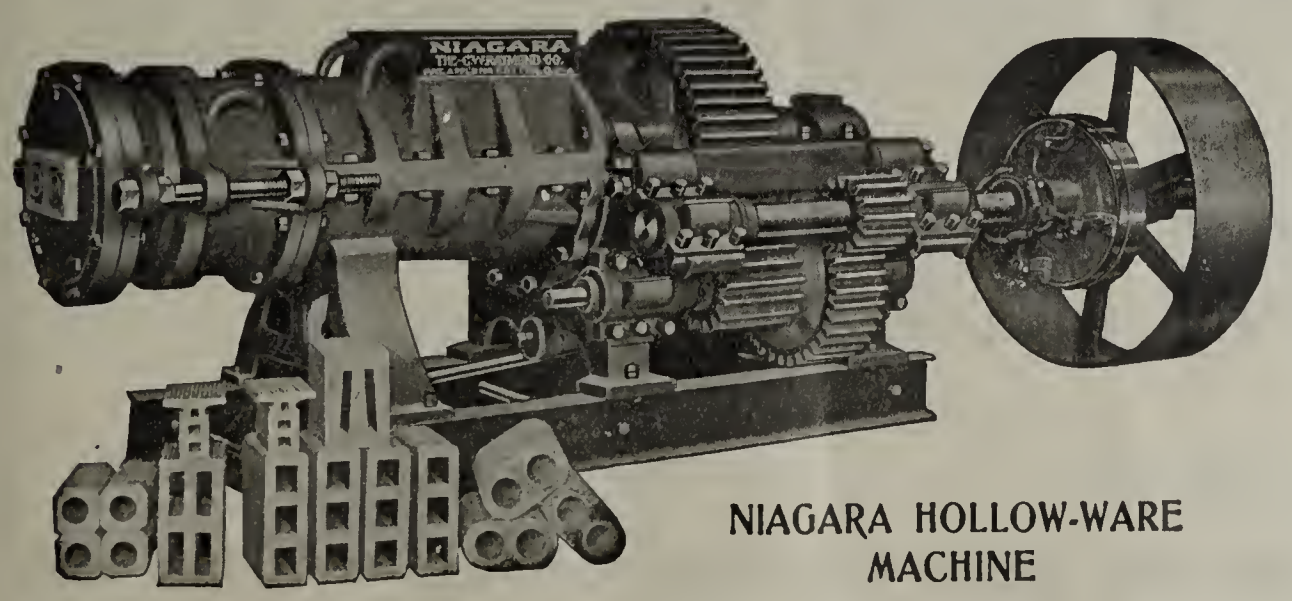
Clay-Working Machinery

DAYTON, OHIO, U. S. A.

NEW YORK
39—41 Cortlandt Street
ST. LOUIS
315 Frisco Building
PITTSBURG
1425 Park Building



AUTOMATIC DOWN-CUT CUTTER

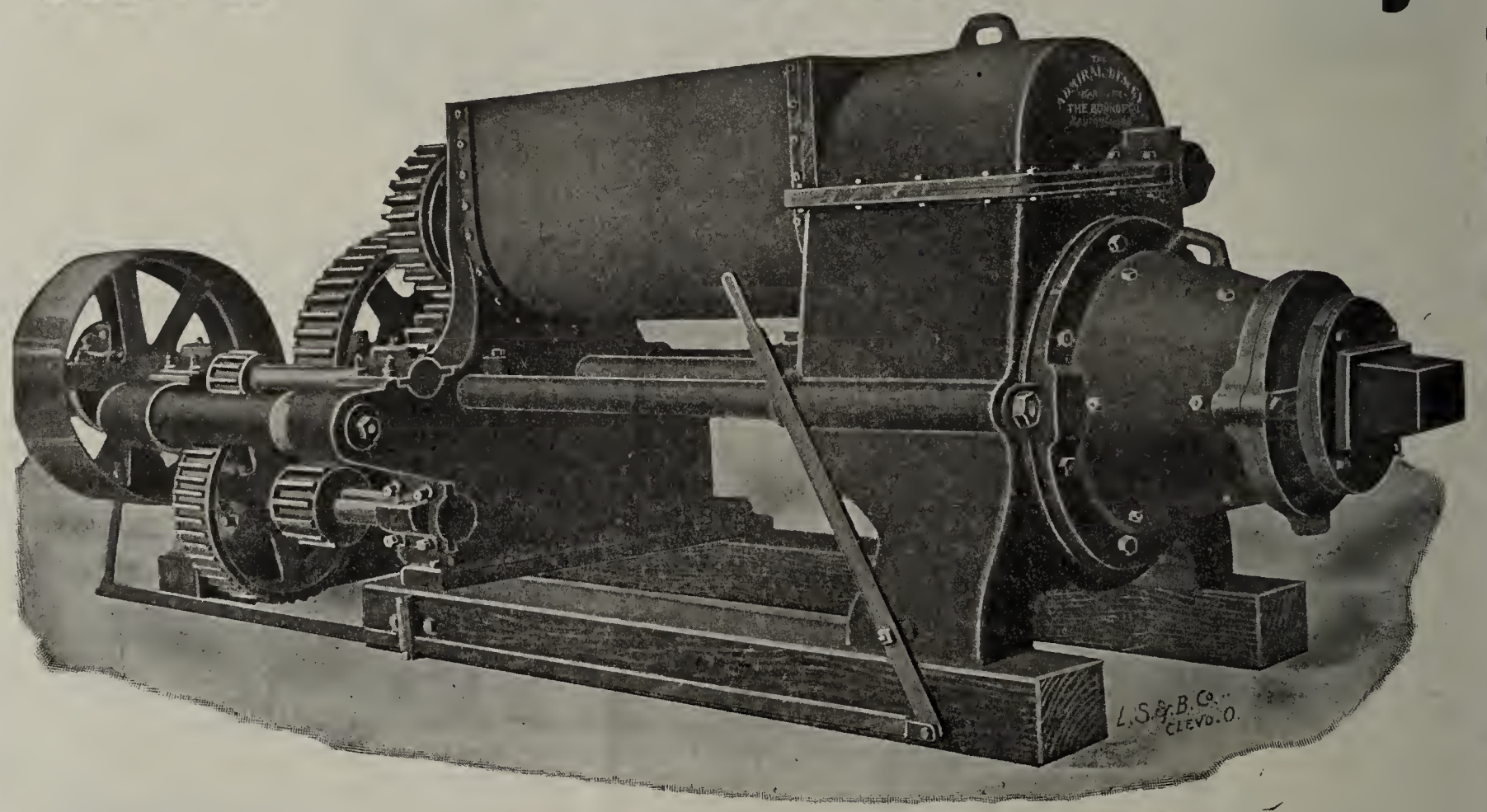


NIAGARA HOLLOW-WARE MACHINE

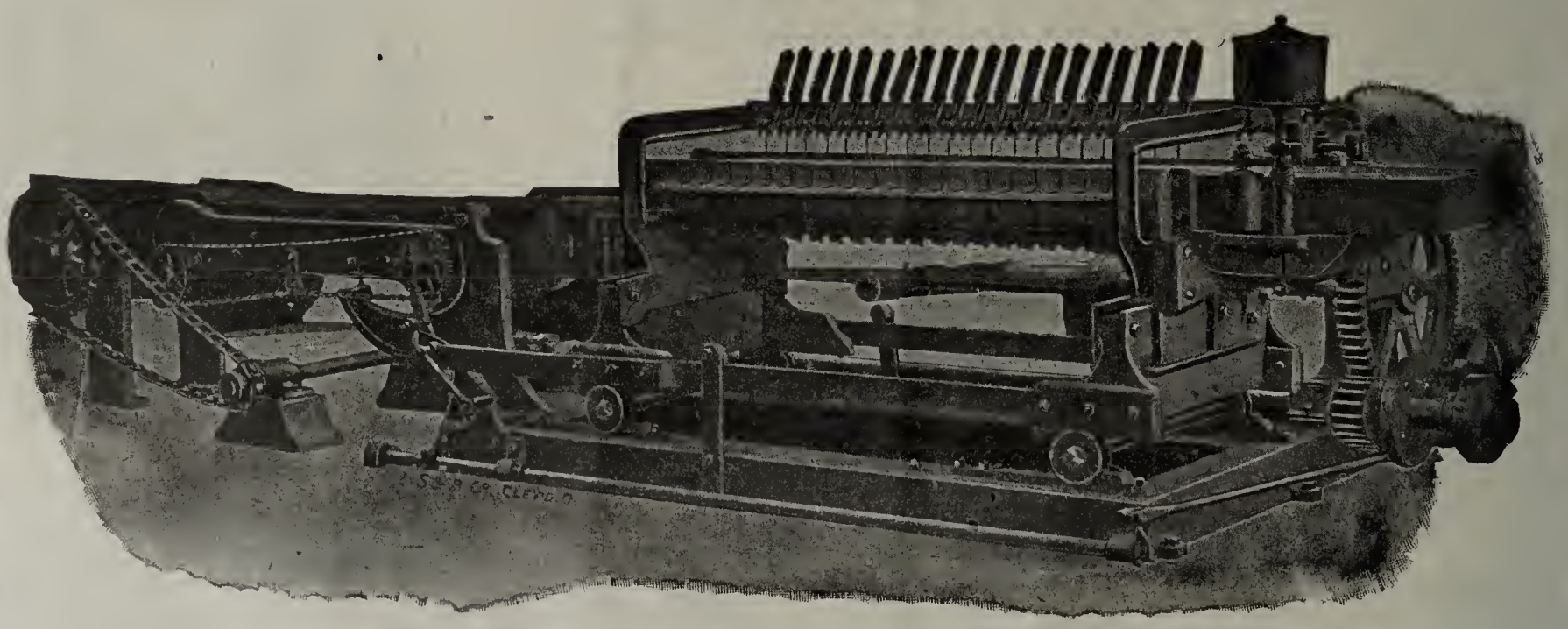
Raymond Machinery Creates New Business for the User Better Brick and more of them.

CATALOGUE

Modern Brick Machinery



SPECIAL COMBINED BRICK MACHINE AND PUG MILL 100,000 daily capacity.
AUGER BRICK MACHINES 10,000 to 100,000 capacity, five sizes.



AUTOMATIC SIDE CUT TABLE. Simple, positive, durable.

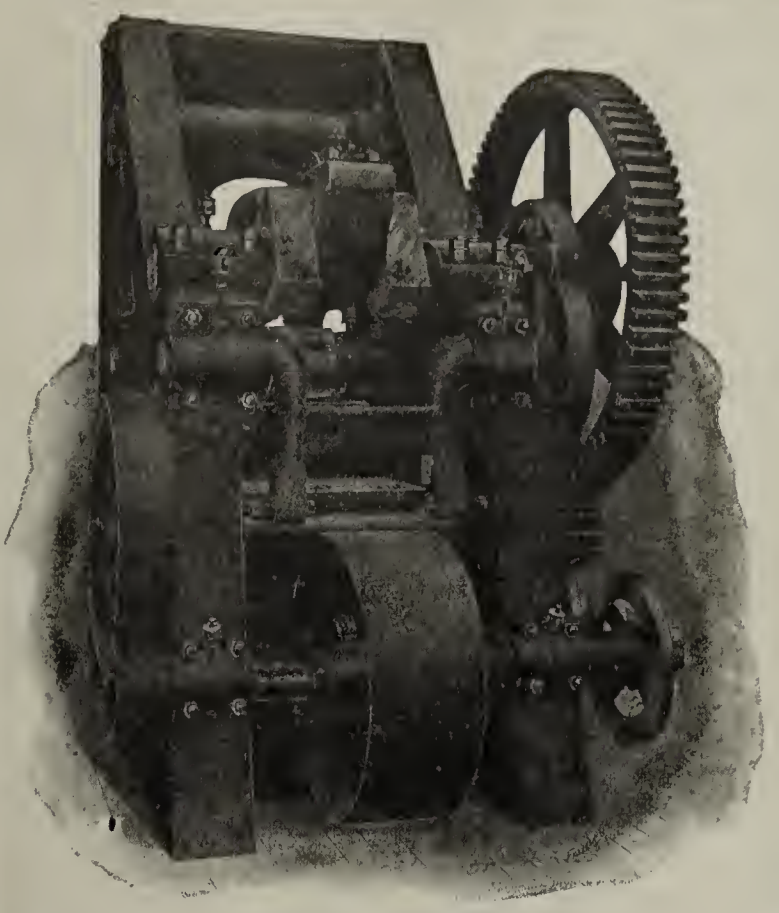
COMPLETE EQUIPMENTS FOR BRICKMAKERS. *ASK FOR CATALOGUE*

THE BONNOT COMPANY, Canton, Ohio.

—WESTERN AGENTS—

CHICAGO BRICK MACHINERY CO., - - 77 Jackson Boulevard, Chicago, Ill.

NEW MODEL BERG BRICK PRESS



Back View.

Still in the Lead AND One Step Further Forward

Even stronger than ever and all self-contained. Greater pressure and fewer working parts than any other machine. Simple, massive, compact. Running mechanism placed in rear, as shown in upper cut, enabling this machine to be SHIPPED IN ONE PIECE.

MANUFACTURED BY
ANDERSON FOUNDRY & MACHINE WORKS
Anderson, Indiana.

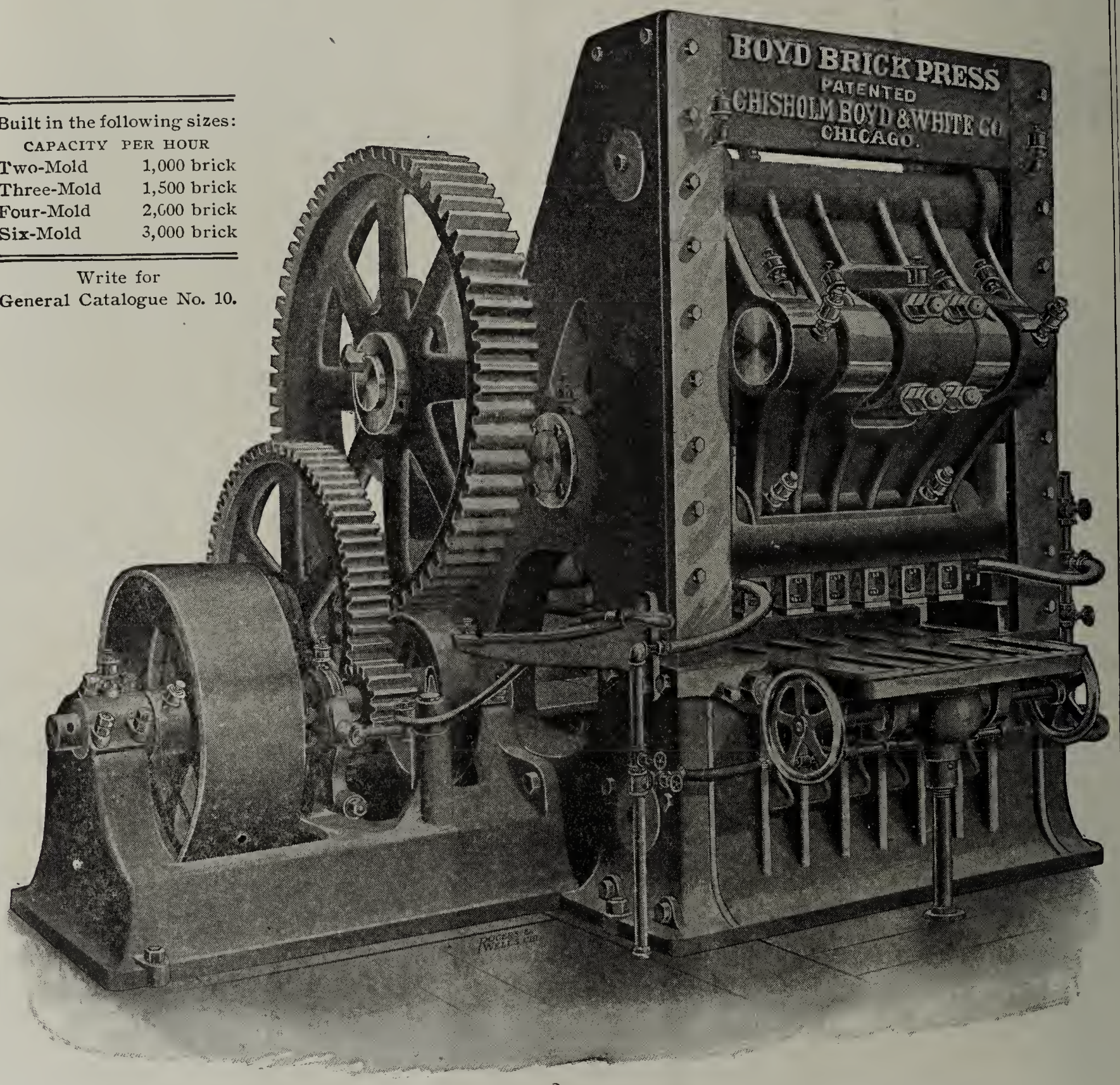
SOLD BY
CHICAGO BRICK MACHINERY COMPANY
77 Jackson Boulevard, Chicago.

The Boyd Brick Press

Built in the following sizes:

CAPACITY	PER HOUR
Two-Mold	1,000 brick
Three-Mold	1,500 brick
Four-Mold	2,000 brick
Six-Mold	3,000 brick

Write for
General Catalogue No. 10.



Another Record for the Boyd Press:

Six of our SIX-MOLD PRESSES in use on ONE YARD since 1892. Average cost of repairs for each machine One Dollar per year.

THE BOYD PRESS has always been distinguished for originality in design and construction. It will make better brick from clay or shale than can be made from the same material by any other press. It is selected and purchased by the most progressive Brick Makers. The largest and most successful brick plants in the country are using Boyd Presses.

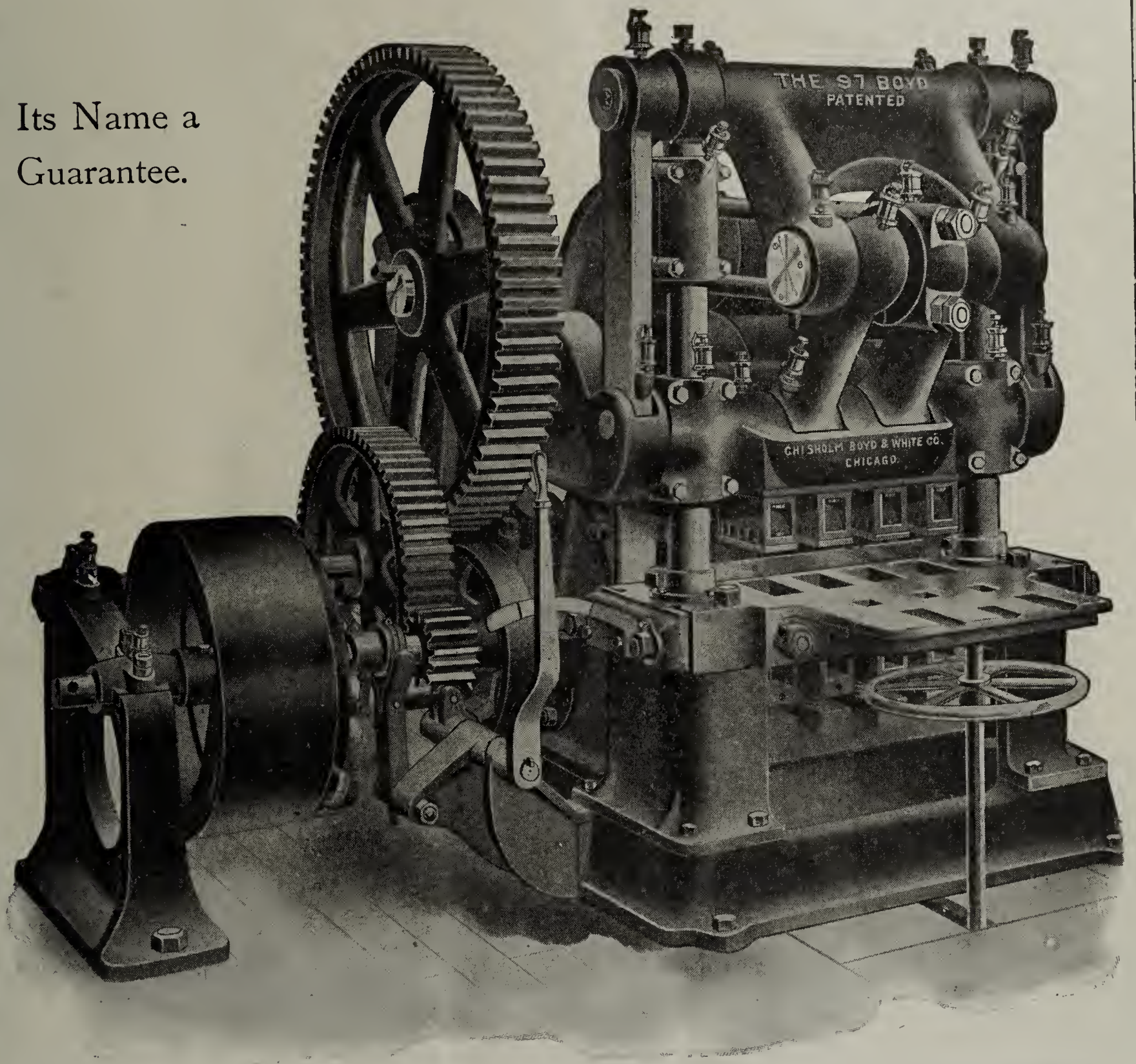
Chisholm, Boyd & White Company

Office and Works, 57th and Wallace Sts. **CHICAGO, ILL.**

The Boyd Brick Press

The '97 Model

Its Name a Guarantee.



THE '97 MODEL BOYD BRICK PRESS has enormous strength and great durability; it is compact; the adjustments are convenient; it operates quietly and smoothly; the workmanship and material are of the best; the design ingenious, and shows the most perfect application of scientific and mechanical principles to the art of brickmaking.

THE BOYD is the only Brick Press provided with an independent adjusting device for regulating the amount of clay in the molds and the pressure on the brick. This feature positively ensures equal pressure and finish on both sides of the brick, and no granulated or soft centers.

Sent on trial and fully guaranteed. Seventy presses of this pattern now in use. Cannot be broken in pressing brick. Write for descriptive catalogue No. 9.

Chisholm, Boyd & White Company

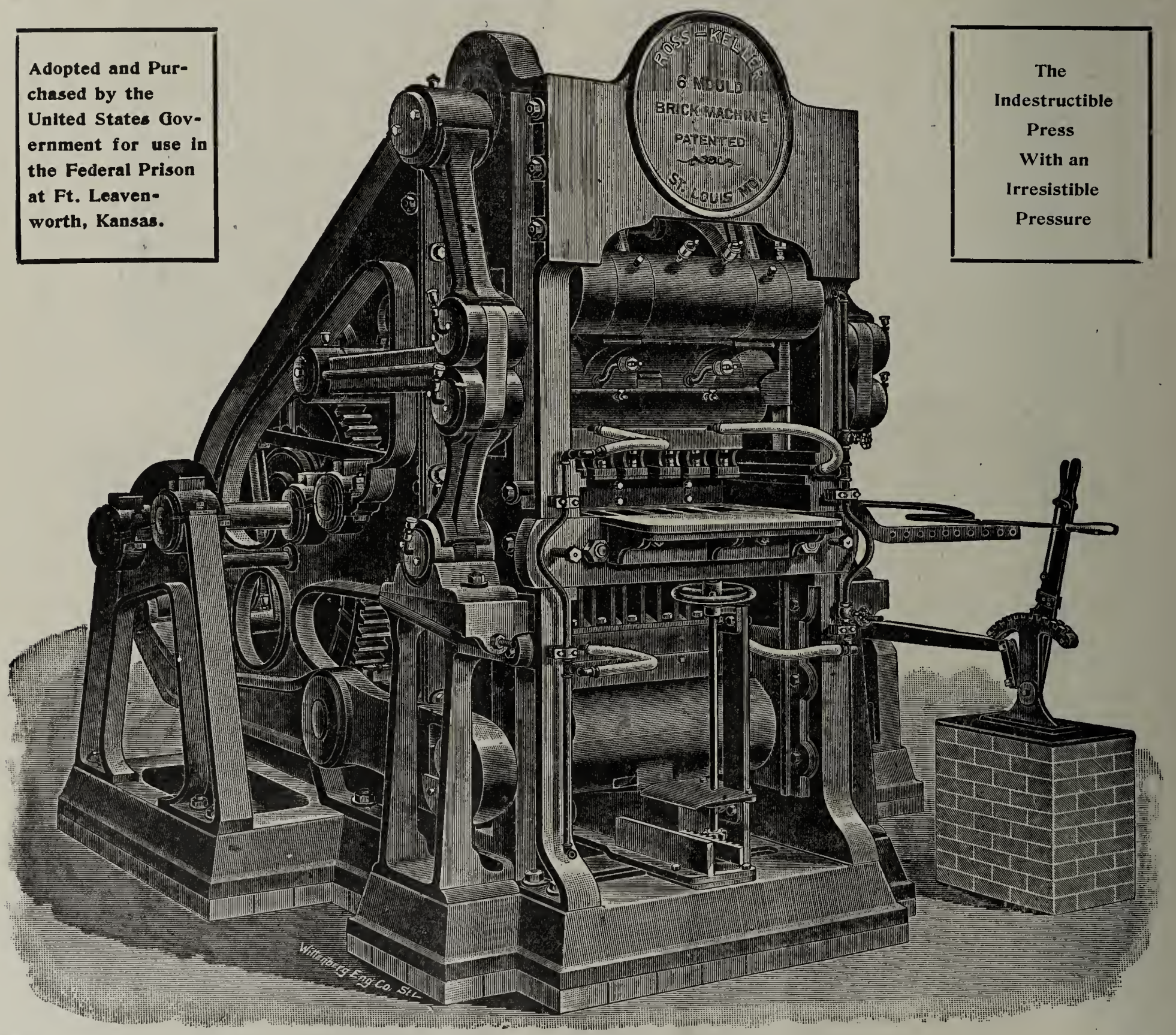
Office and Works, 57th and Wallace Sts. **CHICAGO, ILL.**

SAND-LIME BRICK MACHINERY

We are building and equipping Sand-Lime Brick Plants complete and we guarantee satisfactory results : : :

We manufacture a full line of Clay & Shale Dry Press Machinery : : : : : : :

Adopted and Purchased by the United States Government for use in the Federal Prison at Ft. Leavenworth, Kansas.



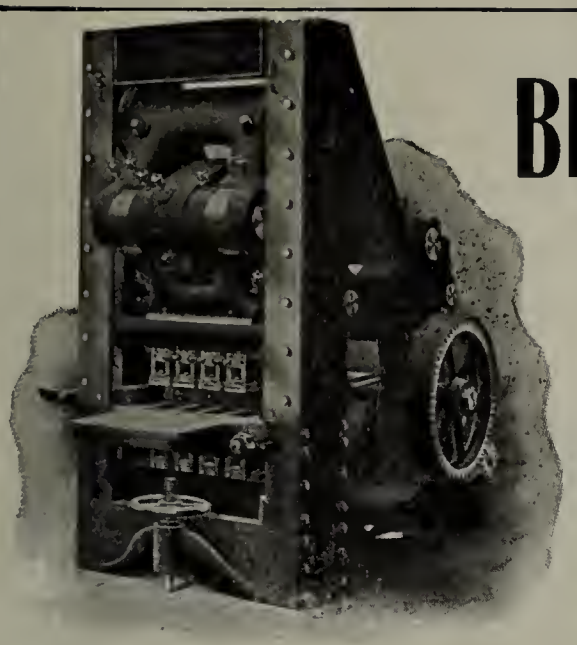
The Indestructible Press With an Irresistible Pressure

For prices and particulars address

Ross-Keller Triple Pressure Brick Machine Co.

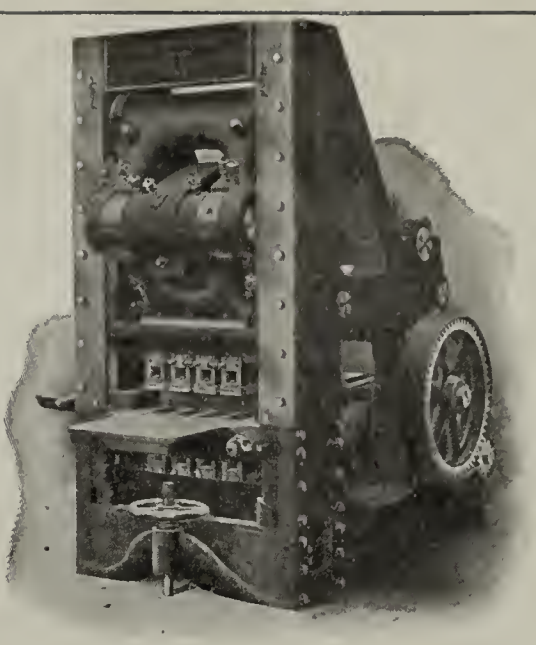
GEO. M. McDOWELL, Sales Agent
for Pacific Coast, Portland, Ore.

FULLERTON BUILDING, ST. LOUIS, MO., U. S. A.

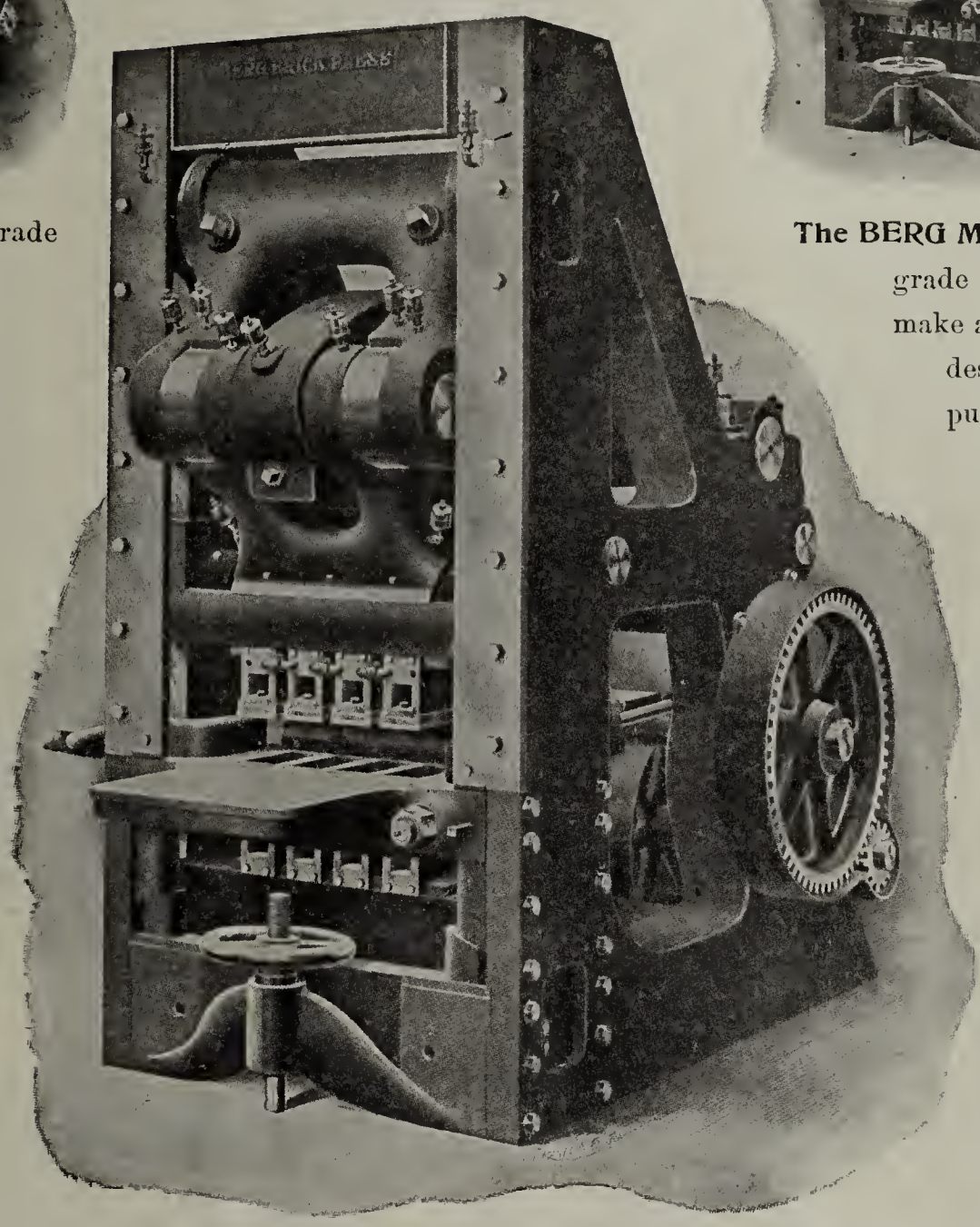


BERG BRICK PRESS

The highest development of the Art of Brickmaking Machinery so pronounced by the United States Government.



The BERG for the highest grade of pressed brick of shale or clay. It makes all kinds of shapes and sizes of brick. Changes from one shape to another can be made in less than an hour's time.



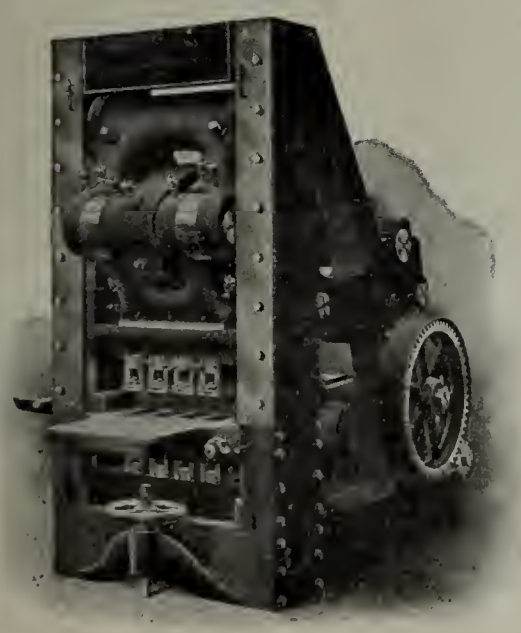
The BERG MAKES the highest grade of fire brick. Can make all kinds of shapes desired for fire-brick purposes.

First-Class Workmanship. Cut Gearing. Fully Warranted.

Three distinct pressures make the brick evenly pressed all through. No granulated centers of the brick.

The BERG makes the best sand-lime brick and cheapest because it is the strongest machine and gives the highest pressure. Thirty-five sand-lime plants in United States use the **BERG** Brick Press SUCCESSFULLY.

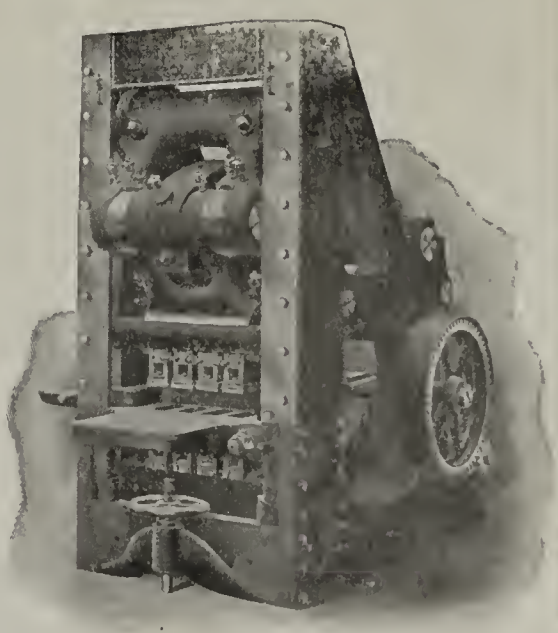
The BERG is the best for sand and cement because of its strong pressure. Uses less cement, makes cheaper brick.



The 1905 Berg Press

Many other steps further forward in improvement and highest grade of material and workmanship, also cut gearing. Fully guaranteed as to its success. Manufactured by its inventor in Toronto, Canada, at the Bertram Engine Works Co. Plans and specifications on the different kinds of plants furnished, also all equipments.

For prices and full particulars, address



A. BERG

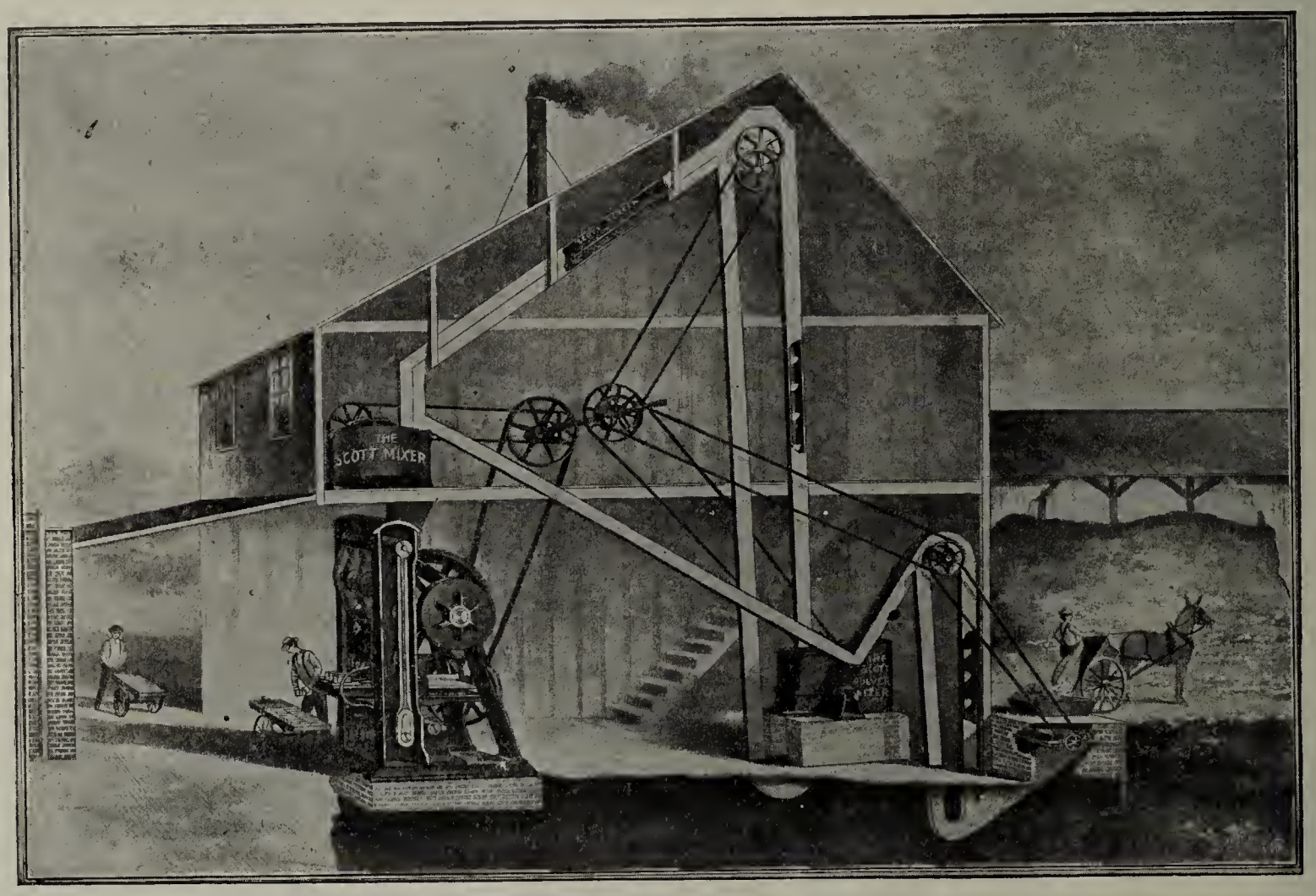
THE BERTRAM ENGINE WORKS

Toronto, Ontario, Canada

Rojestvensky

certainly was unfortunate, for while he had the knowledge of tactics within himself he was not backed up with the necessary *equipment, enthusiasm, organization.*

In waging our war against competition we claim that in our campaign we know that our facilities for manufacture are the very best; our organization is practically complete, and our enthusiasm—well, you can't imagine how strong that is unless you are operating an Andrus Press.

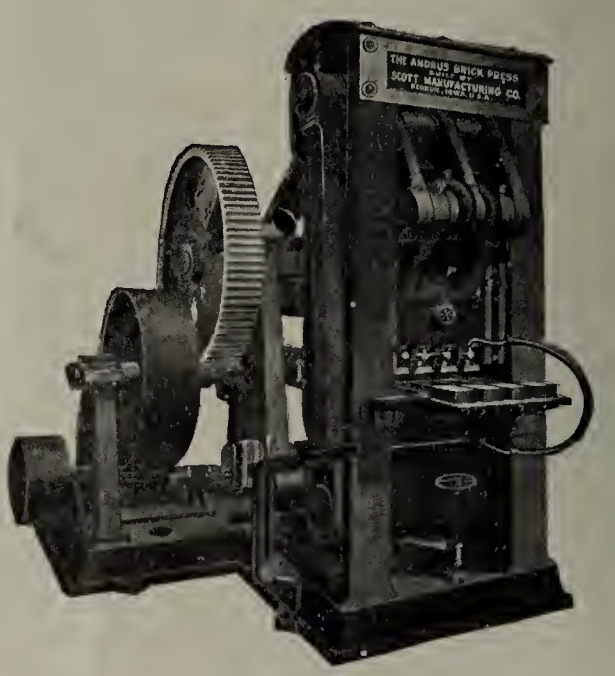


THE SCOTT NOISELESS PLANT.

We Install Complete Plants

Our Drafting Department Is At Your Service.

We cordially invite the brickmaker and capitalist to come to our city and see our presses in operation in the "St. Louis District," which is conceded to be the greatest Dry Press center in the world.



THIS IS THE PRESS THAT SCOTT BUILDS.

SCOTT MANUFACTURING CO.,

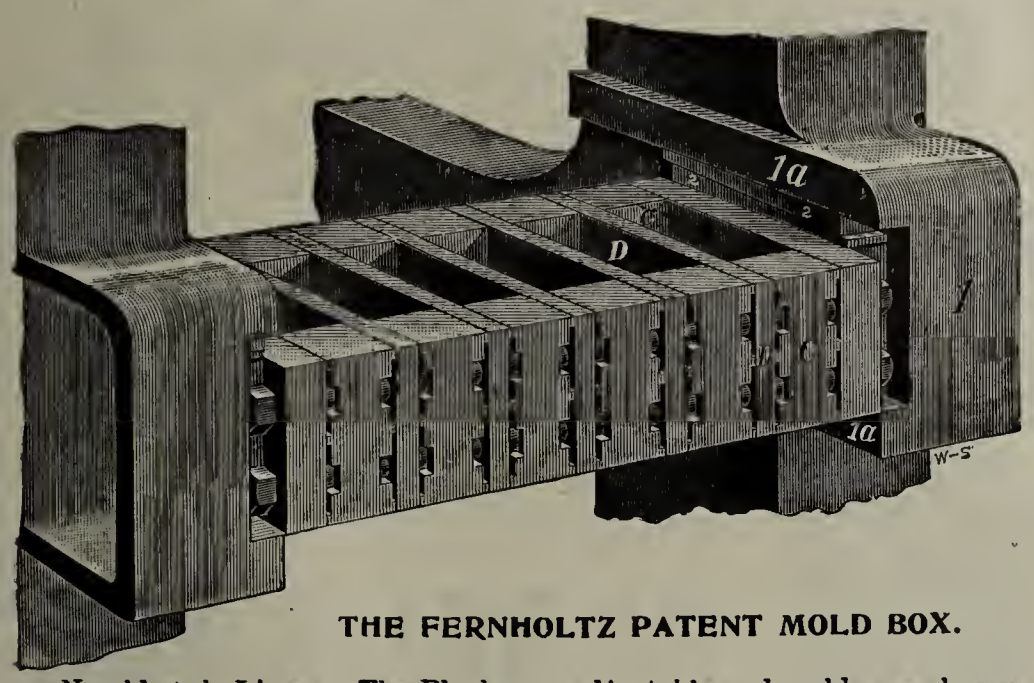
Commonwealth Trust Building, Saint Louis, Missouri.

The Fernholtz Brick Machinery Co.

Manufacturers of

The Celebrated Fernholtz Dry Press

Four mold Press 20,000 daily capacity. Six mold Press 30,000 daily capacity

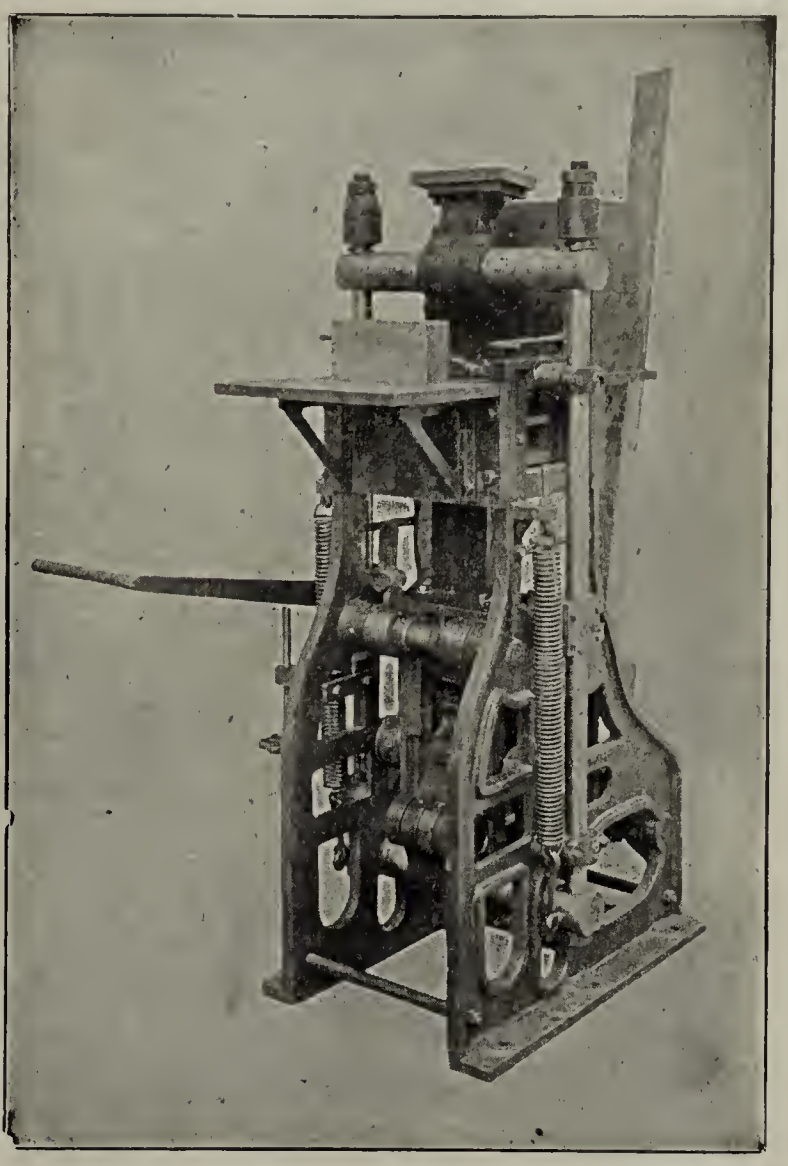


THE FERNHOLTZ PATENT MOLD BOX.

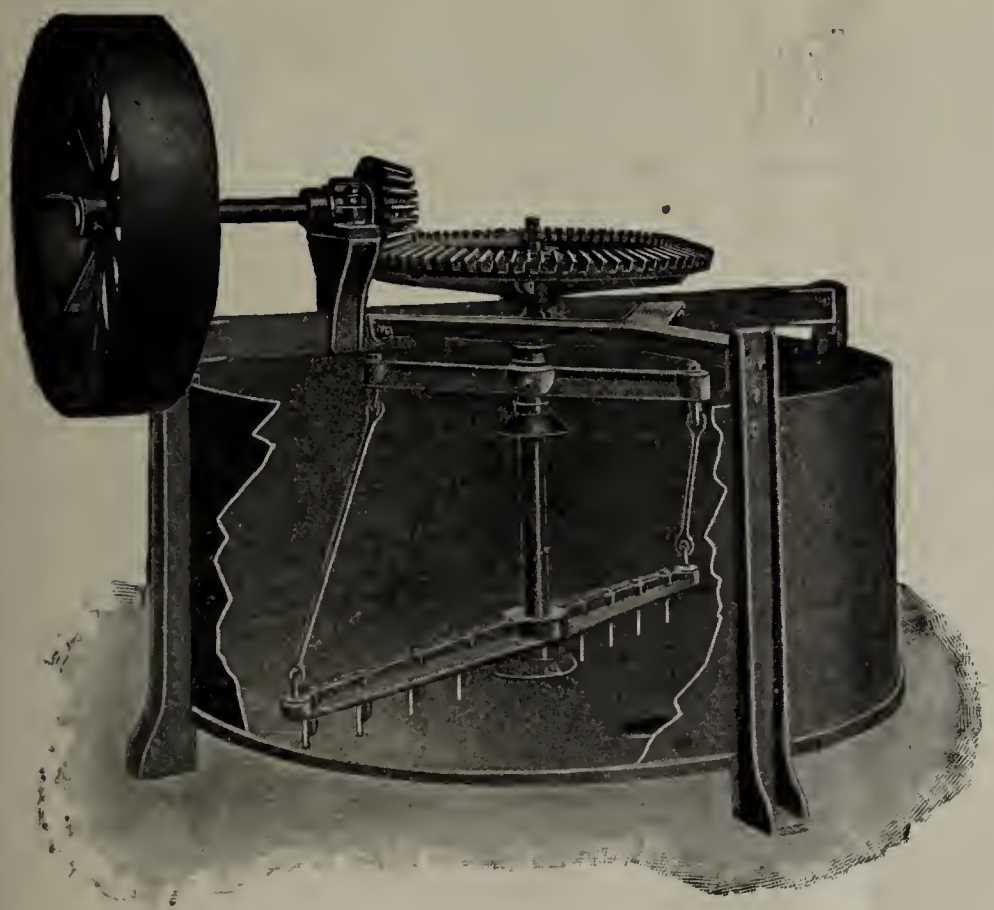
No old style Liners. The Blocks are adjustable and molds are always one size. We have put them in most all makes of Dry Press machines. Easily and quickly adjusted. They are made entirely out of chilled iron, the hardest known metal.

GRATH PATENT HAND POWER PRESS.

Especially adapted for ornamental designs. Any size brick up to 12⅝ inches long, 10 inches wide and 4¼ inches thick.
Brick set into kiln direct from press.



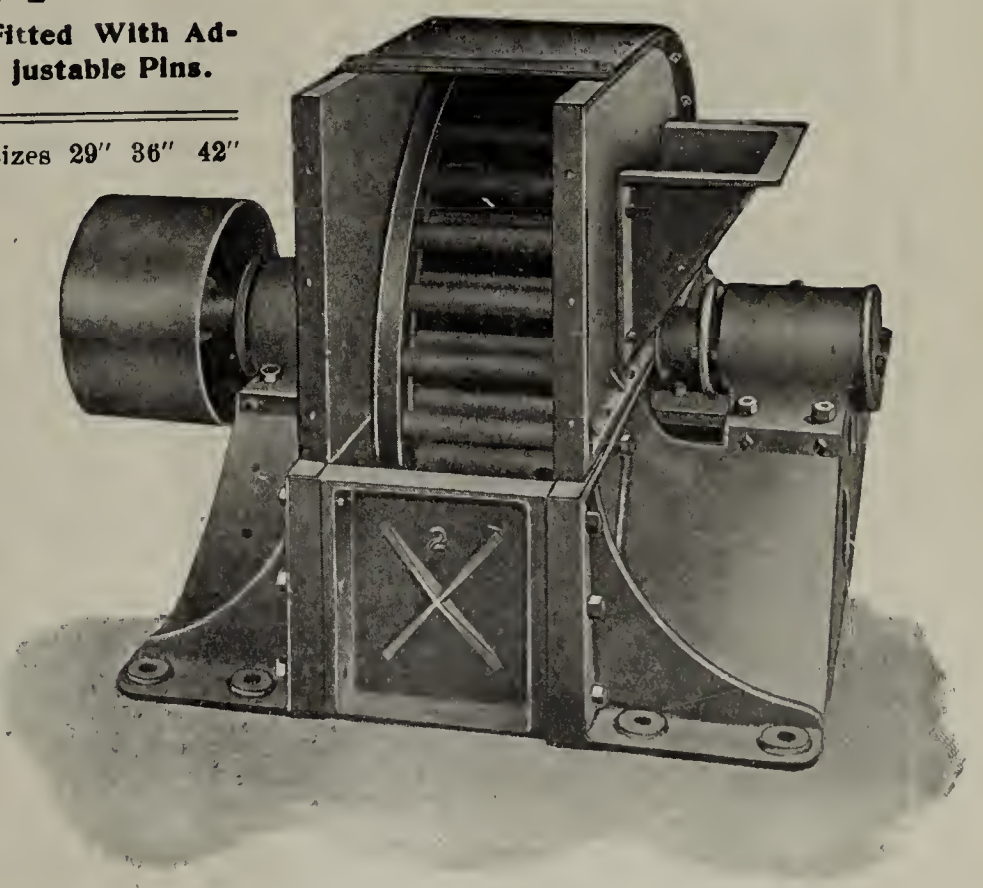
GRATH PATENT HAND POWER PRESS.



A GOOD MIXER IS ALWAYS APPRECIATED.

Fitted With Adjustable Pins.

Sizes 29″ 36″ 42″

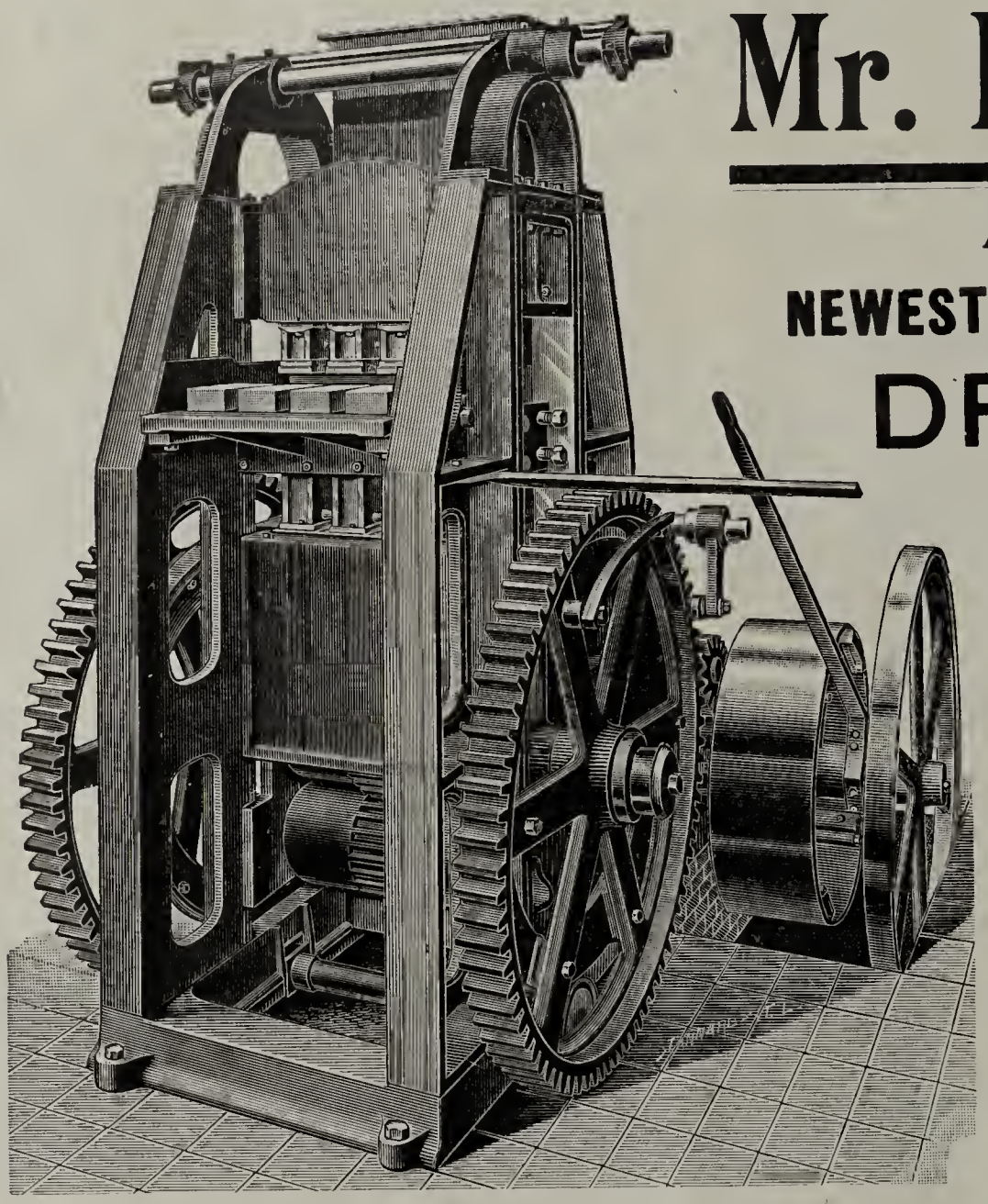


THE FERNHOLTZ CLAY PULVERIZER.

The Fernholtz Brick Machinery Co.

Cable Address "Fernbrick." Western Union Code.

Boyle Avenue and Old Manchester Road, ST. LOUIS, MO., U. S.A.



Mr. Brickmaker

Are you looking for the

NEWEST, BEST AND CHEAPEST IN

DRY-PRESS BRICK MACHINES?

If so, you cannot afford to overlook the strong points of excellence and the remarkable **simp icity, strength** and **efficiency** fonnd in

THE RELIANCE

"The Machine with a Future"

Radical departure from old principles.

Unique in construction, sound in principle, unrivaled in attainment!

Makes not only Brick but Money

A FEW POINTS:

1. Weight and Floor Space about one-half that of any other Brick Machine.
2. Compression of Clay Perfect and Uniform. (Entirely new Principle).
3. Every Brick is a Face Brick. There are No Granulations.
4. Adjustment permits any pressure desired (A Feature peculiar to the **RELIANCE.**)
5. Cheapest because having fewest parts. (Also cheapest to keep in repair).

EMINENTLY PRACTICAL AND ECONOMICAL

WRITE TO-DAY FOR PARTICULARS.

SEND CLAY FOR SAMPLE BRICKS.

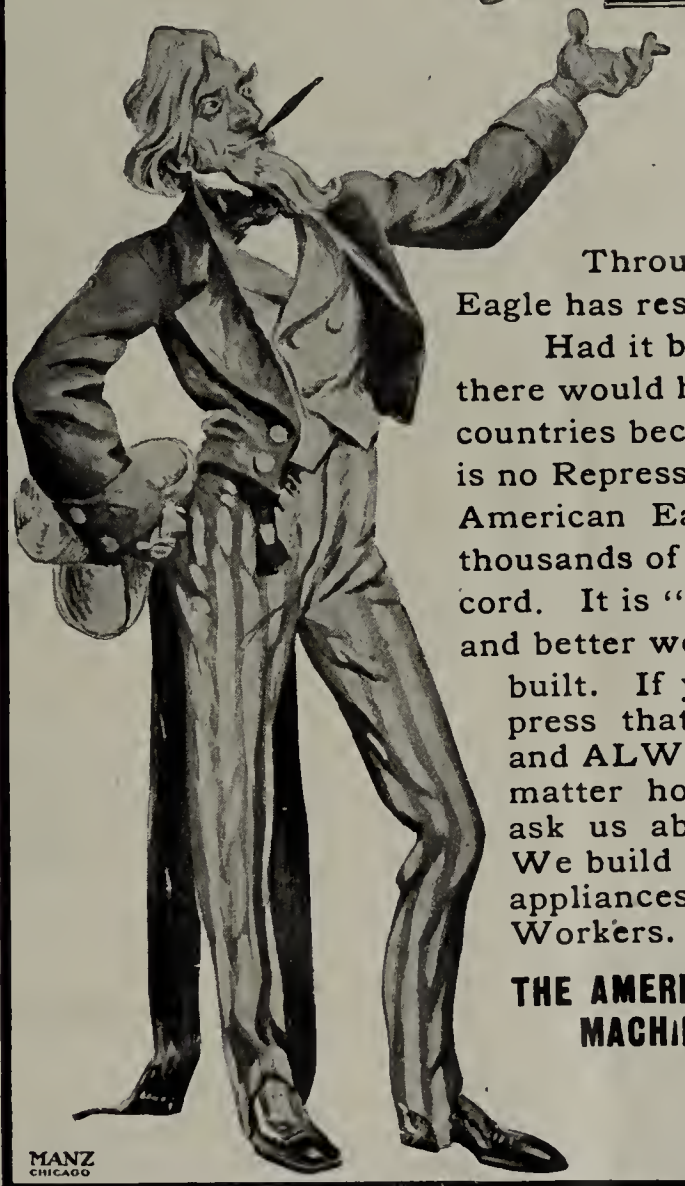
Made By the

RELIANCE MACHINE AND TOOL WORKS

ST. LOUIS, MO.

Peace Restored

"I Swan: another triumph for the AMERICAN EAGLE"



The American Eagle

Through the help of Uncle Sam the American Eagle has restored peace between Russia and Japan.

Had it been a question of the merits of Represses there would have been no argument between the two countries because both Russia and Japan concede there is no Repress in the world which will compare with the American Eagle. In this opinion Uncle Sam and thousands of his Clay Working sons are heartily in accord. It is "Built Right and Runs Right." Does more and better work with less repairs than any other press built. If you want a Repress that is best NOW, and ALWAYS will be, no matter how you work it, ask us about the Eagle. We build all machines and appliances needed by Clay Workers.

THE AMERICAN CLAY MACHINERY CO. Bucyrus, O. U. S. A.

SEWER PIPE MACHINERY

PRESSES AND DIES

I. E.

TRAP DIES

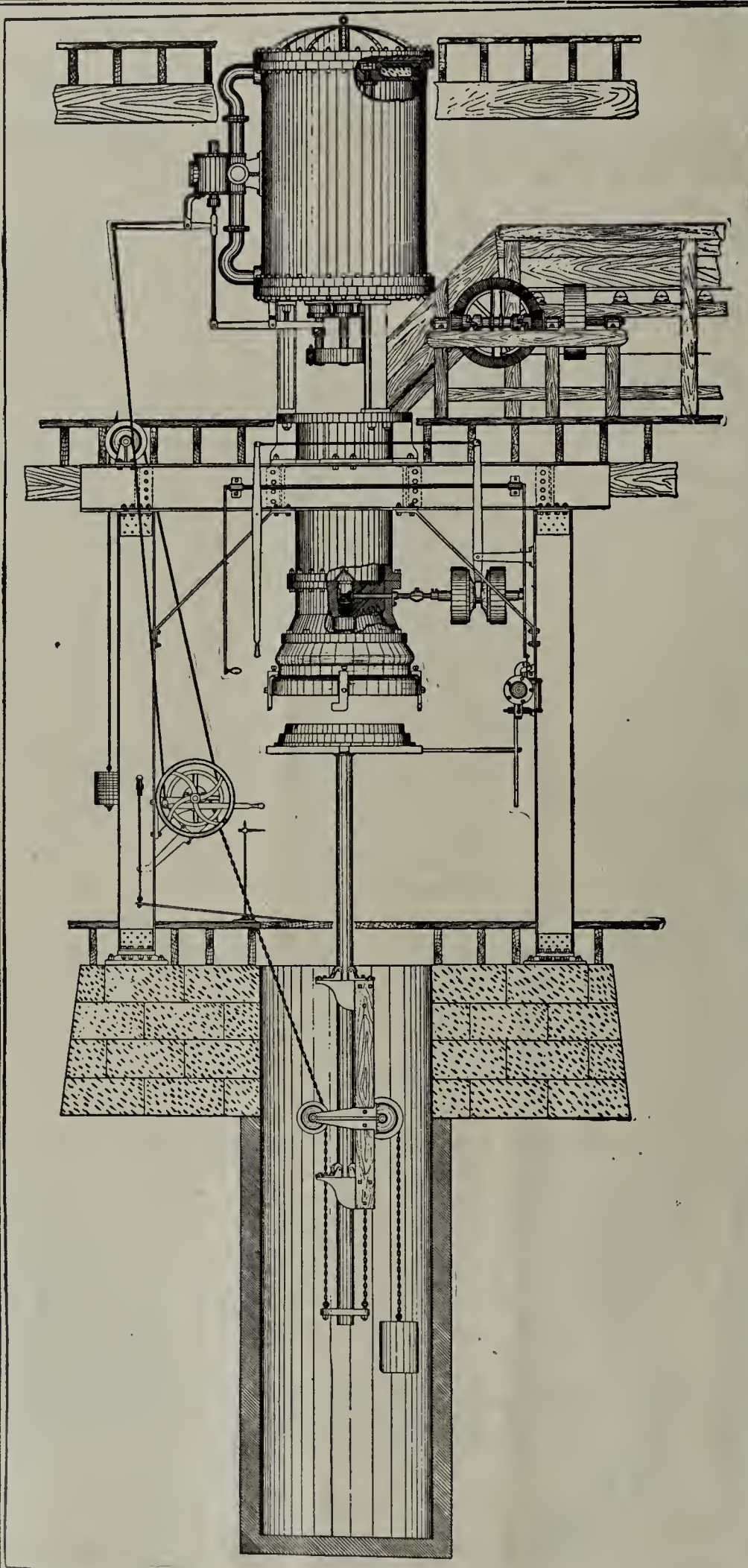
CLUSTER TILE DIES

FLUE DIES

COPING DIES

RING DIES

TUYERE AND SHAPE DIES FOR BESSIMER FURNACES



NOZZLE AND SLEEVE PRESSES

TUYERE PRESSES

DOUBLE END HORIZONTAL STEAM PRESSES

DRY AND WET PANS

CLAY MILLS COMBINATION CLAY PANS

CLAY WORKING TOOLS

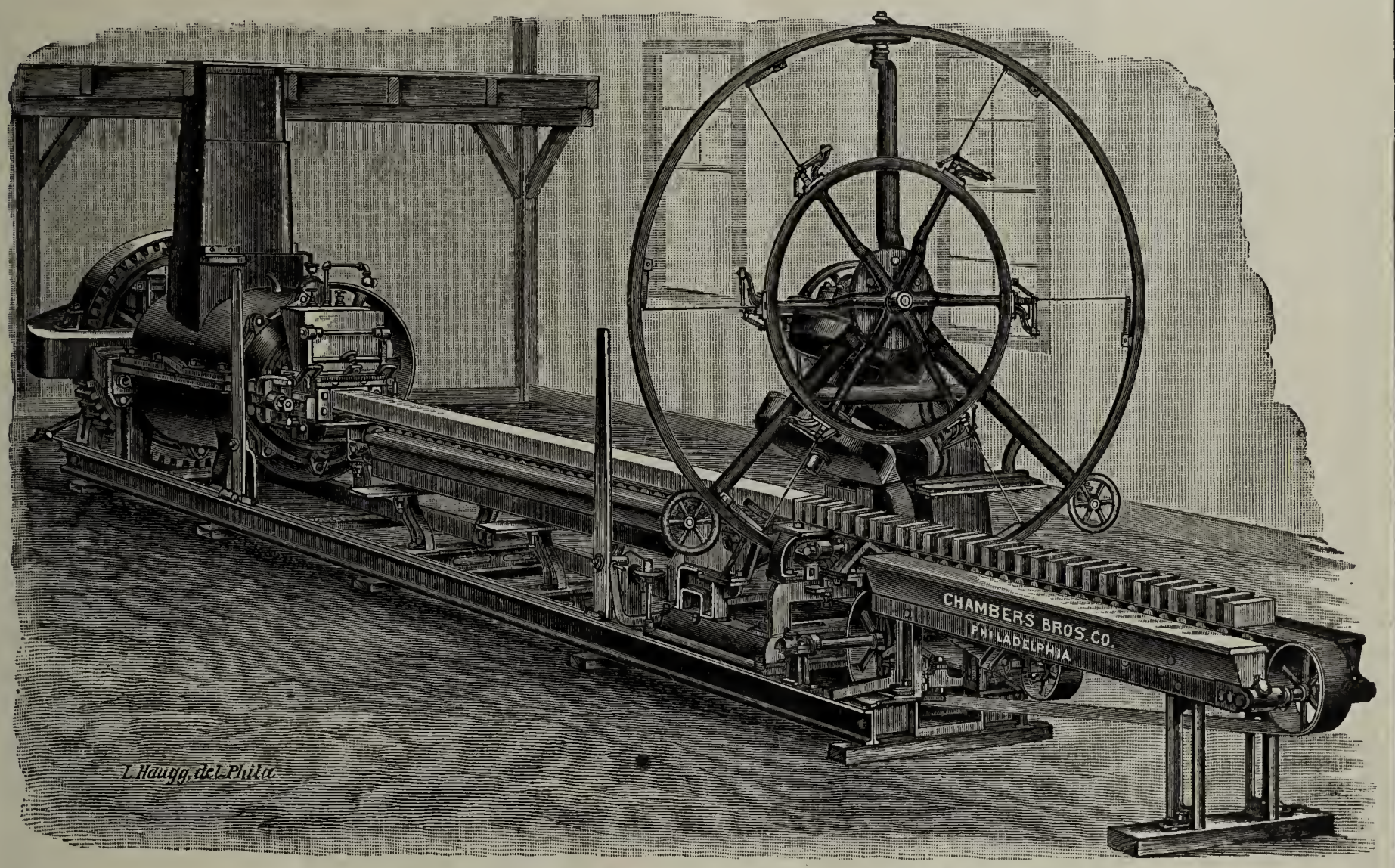
THE TURNER VAUGHN & TAYLOR CO.

WRITE FOR PRICES STATING CAPACITY

Cuyahoga Falls, Ohio, U. S. A.

MACHINERY FOR BUILDING BRICK
AND FOR STREET PAVERS

ROUND CORNER PAVING BRICK WITHOUT REPRESSING



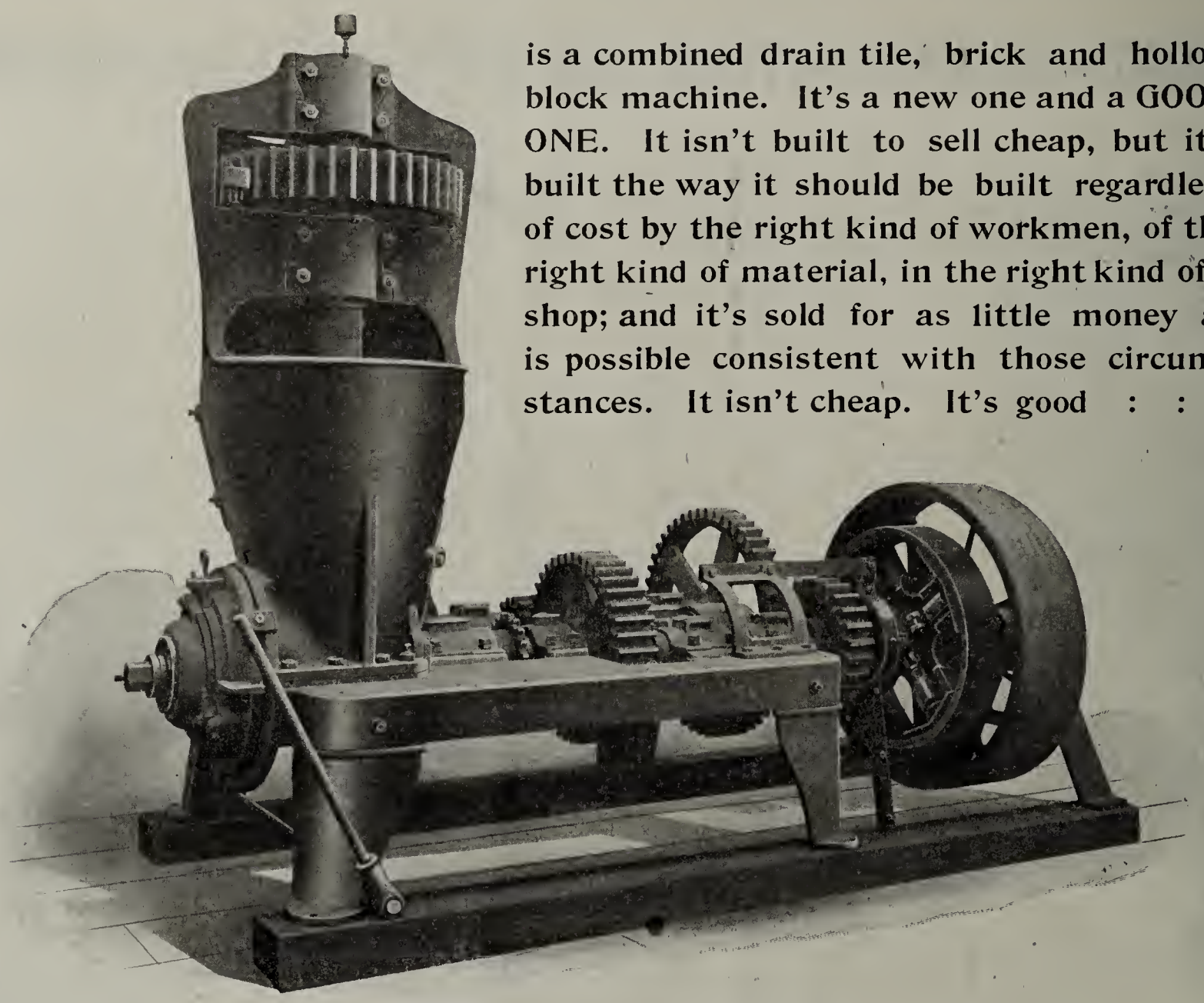
THE CHAMBERS AUTOMATIC SIDE-CUT BRICK MACHINE.

Automatic End Cut Brick Machines of five sizes, having capacity from 10,000 to over 100,000 brick daily under favorable conditions.

CHAMBERS BROTHERS COMPANY
52D AND MEDIA STREETS
PHILADELPHIA, PA.

E. R. FRAZIER, Chicago Agent,
59 West Jackson Boulevard.

The Brewer No. 10A



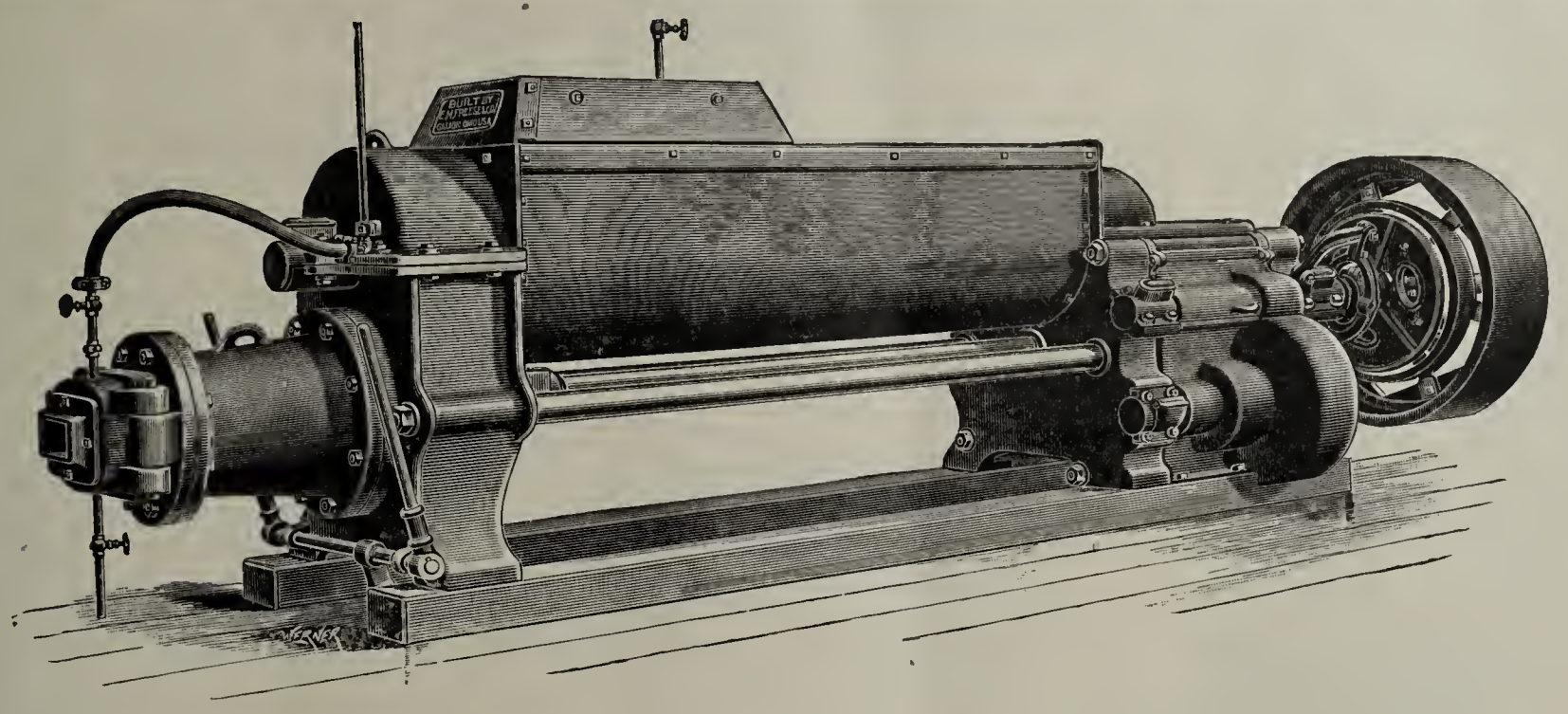
is a combined drain tile, brick and hollow block machine. It's a new one and a GOOD ONE. It isn't built to sell cheap, but it's built the way it should be built regardless of cost by the right kind of workmen, of the right kind of material, in the right kind of a shop; and it's sold for as little money as is possible consistent with those circumstances. It isn't cheap. It's good : : :

Liberal Exchange Offers

will be made to all those operators having any of the older Brewer Patterns. Let us know what you have and we'll make you a proposition : : : : : : :

H. BREWER & CO., TECUMSEH, MICHIGAN.

UNION BRICK MACHINES



We build these Machines in five sizes. Capacities to 10,000 brick per hour.

Several hundred are in everyday use. They do first-class work and are convenient, economical and durable. This can be verified by investigation.

We also build Brick Machines with separate Pug Mill.

Don't forget our Automatic Cutters. **They give satisfaction.**

State your requirements and let us furnish particulars.

E. M. FREESE & CO.

GALION - - - - OHIO

LAMINATION is the source of more loss, more worry and more anxiety than all other troubles of a brickmaker

KENTON C READ, Pres. ANDY O'CONNELL, Vice Pres. and Gen'l Mgr C. M. MILLER, Sec.-Treas.

THE

C. M. Miller Mfg. and Mining Co. Inc.

MAKERS OF

High Grade Veneer and Building Brick

Office, 331 Ohio Street.

New Phone 1142.

Terre Haute, Ind. Dec. 22. 1904.

Mr. H. L. Hix, Mgr.

The Wallace Mfg. Co., Frankfort, Ind.:

Dear Sir—I feel that I must tell you my experience with the brick made on the Intermediate Wonder:—

A few days ago a very prominent contractor asked me to bring him some samples of our brick. I fixed up some samples and started to his place, and just as soon as he saw them, he said: "I don't want them—they are no good; I would not lay one of that kind of brick," but I begged him to look at them and tell me why he did not want them. He asked me if he could break one of them, and I said, "Yes, break all of them." So he took his hammer and hit one on the corner; then he looked up at me and said: "I never saw a stiff mud brick like that;" then he broke it all up, just as nice as any brick, and he said: "That is the first stiff mud brick I ever saw without lamination," and that they were all right.

We are now selling our brick as fast as we can deliver them.

Pardon me for taking your time, and with SUCCESS to the WONDER, I am,

Yours very truly,

Andy Connell
V Pres and Gen Mgr.

In the event that you want to make brick filled with LAMINATION, CRACKS and CROOKS, a Wonder Machine will not answer your purpose.

THE WALLACE MFG. CO.

FRANKFORT, IND., U. S. A.

Highest point of perfection achieved by the **WONDER.**

It works clays where other machines fail.

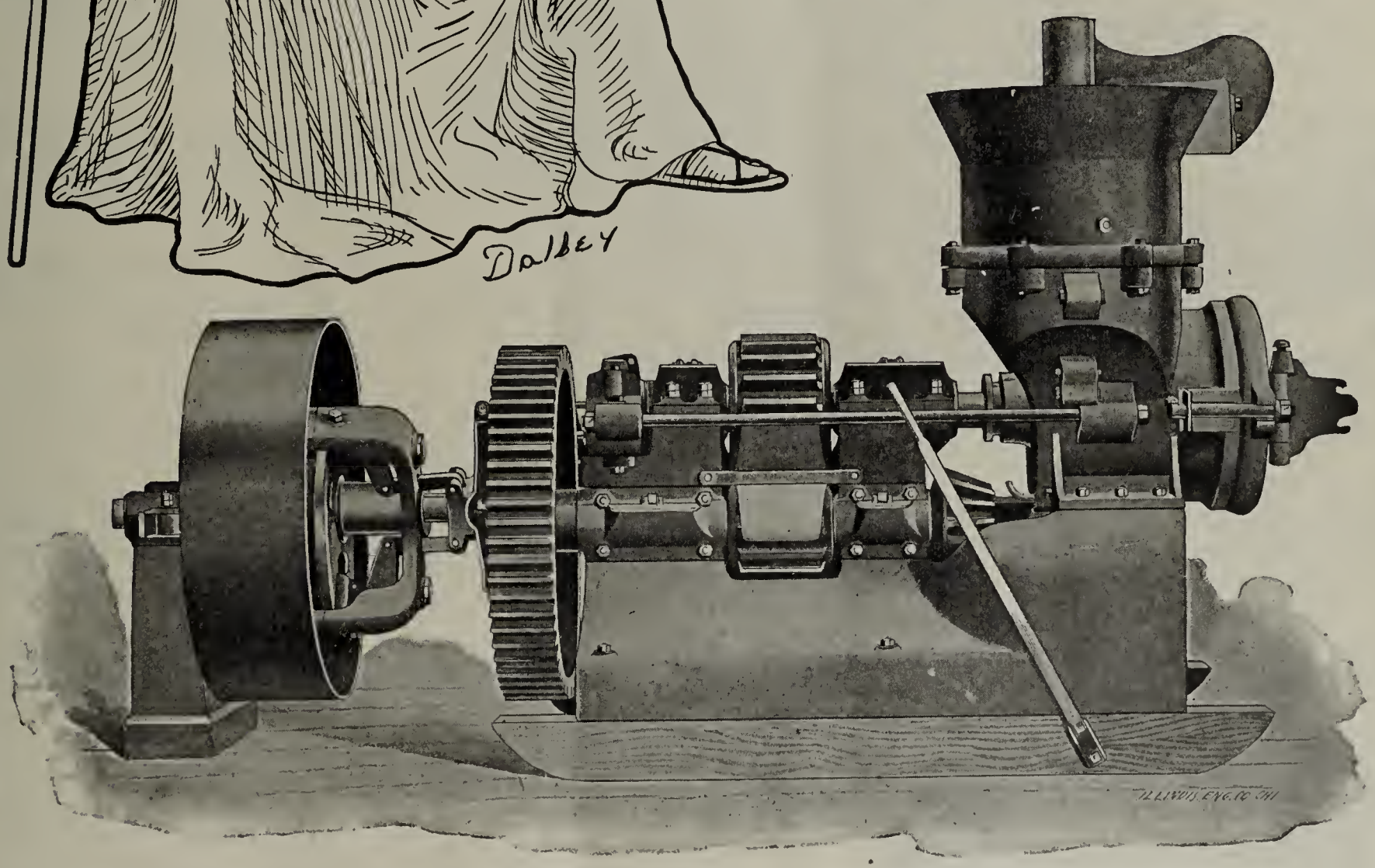
We are specialists in our line and difficult cases are sent to us for treatment.

Our experience has been large and varied, and may be of value to you.

Our service is yours for the asking.

Write us.

Our line is complete. We manufacture Brick Machines, Drain Tile Machines, Brick and Tile Cutting Tables, Automatic Cutters, Clay Preparing and Clay Reducing Machinery, and a full line of Brick and Tile Yard Supplies.



The Wallace Mfg. Co.

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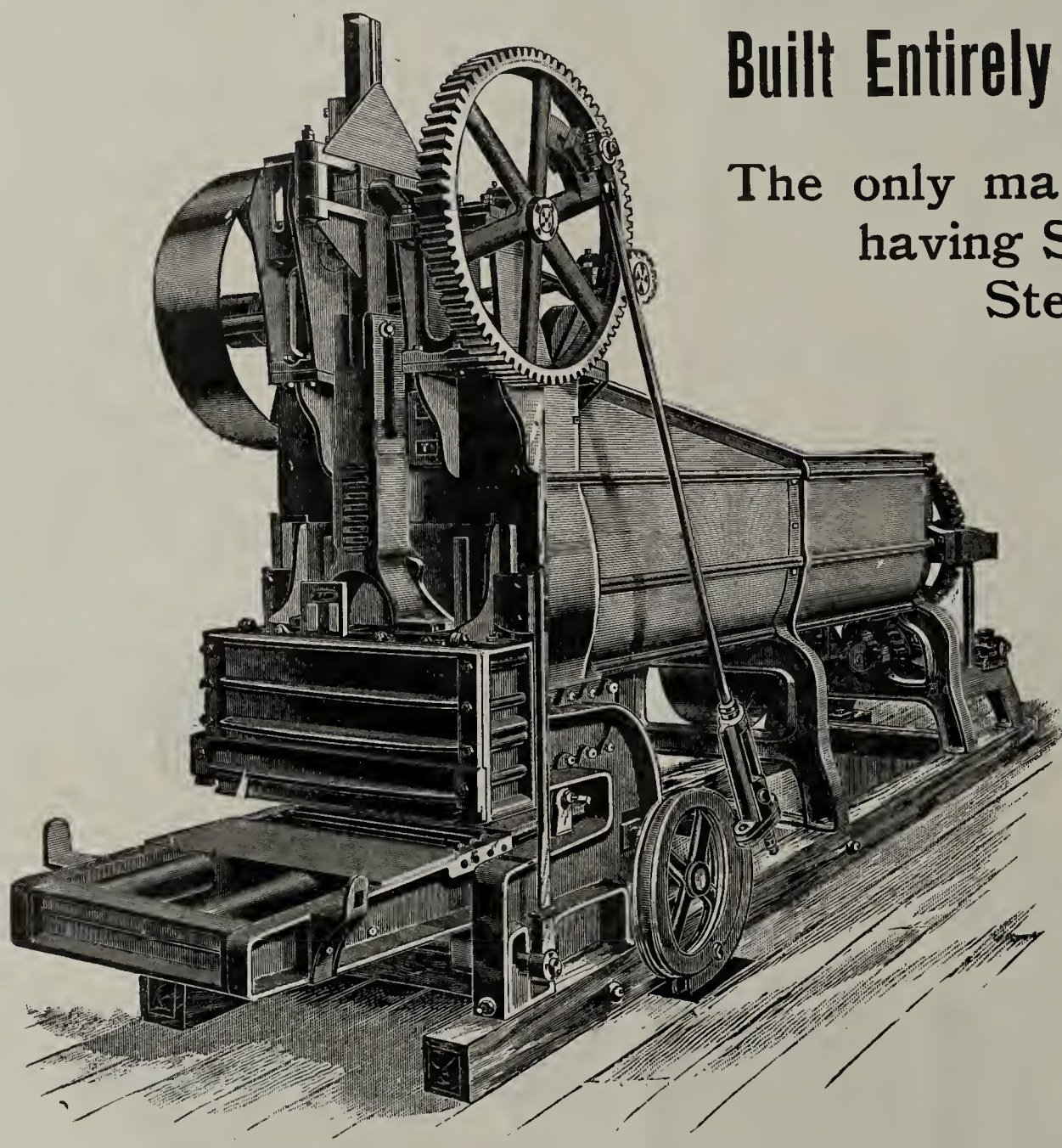
THE POTTS
HORIZONTAL BRICK MACHINE



Built Entirely of Iron and Steel.

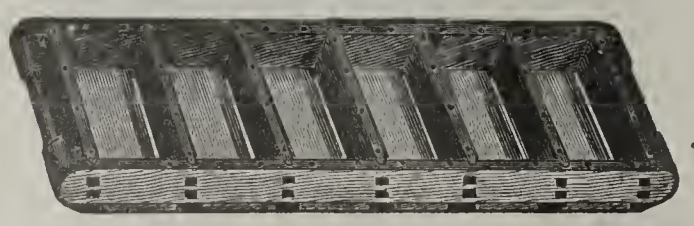
The only machine of this class having Steel Gear and Steel Shaft.

Built of the Best Material by the Best Workmen.

Simple, Strong and Durable.

No extra pug mill required to enable working the clay direct from the bank. Its great strength enables working the clay as stiff as practicable, insuring brick which will be STRAIGHT and SQUARE.

THE LEADER OF ALL SAND MOULD MACHINES.



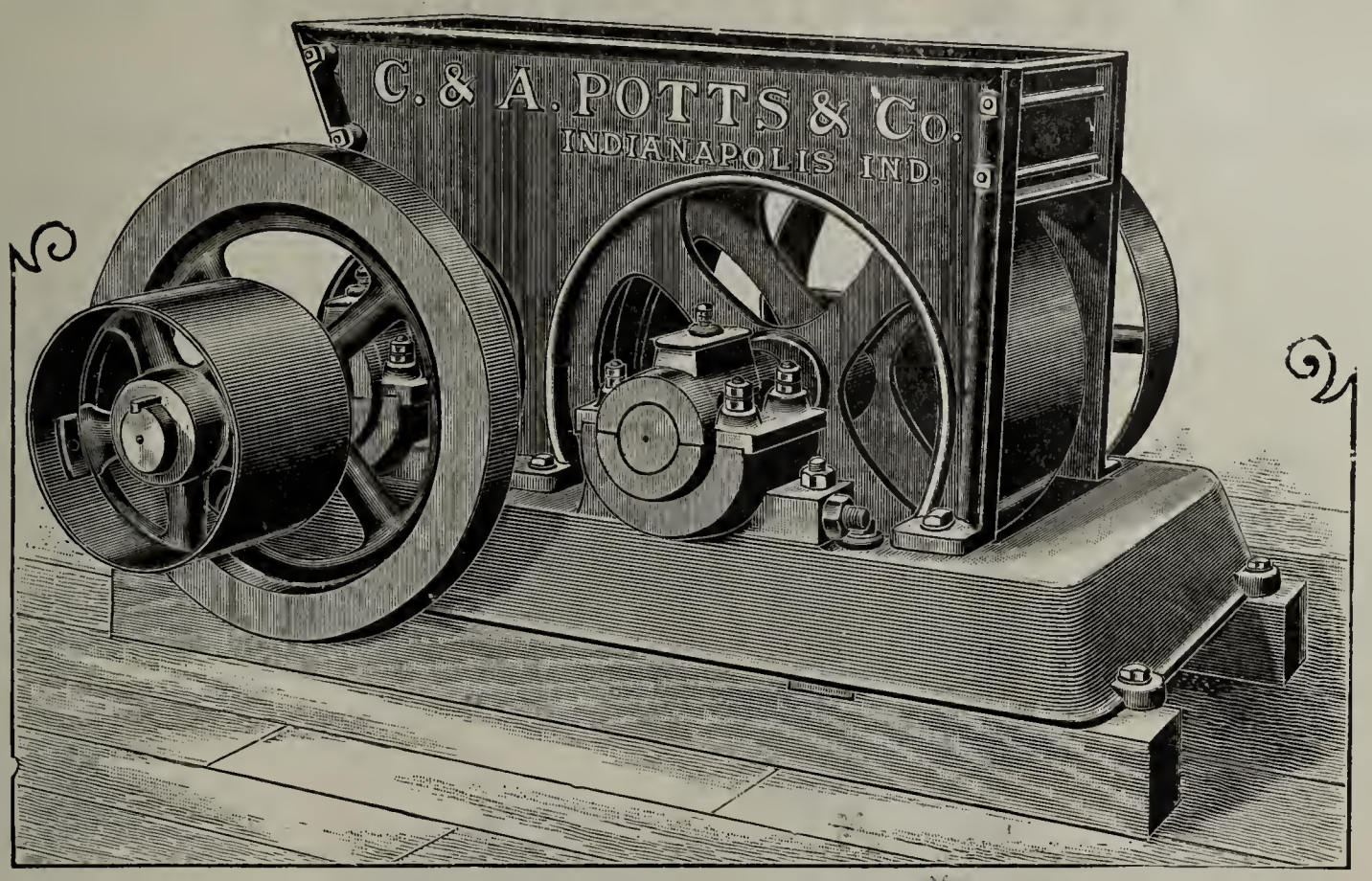
BRICK MOULDS A SPECIALTY

QUALITY IS OUR AIM.

We manufacture a complete line of Brick Yard Supplies. Write for prices.

C. & A. POTTS & CO., Indianapolis, Ind.

THE POTTS DISINTEGRATOR



Is not a spite machine, but is built the best possible. Having Heavy Chilled Rolls, Ring Oiling Bearings, Shafts of Steel and large in Diameter. The most successful machine for grinding out sticky clays and separating the stone.

THE POTTS MOULD SANDER

Simple in Construction,

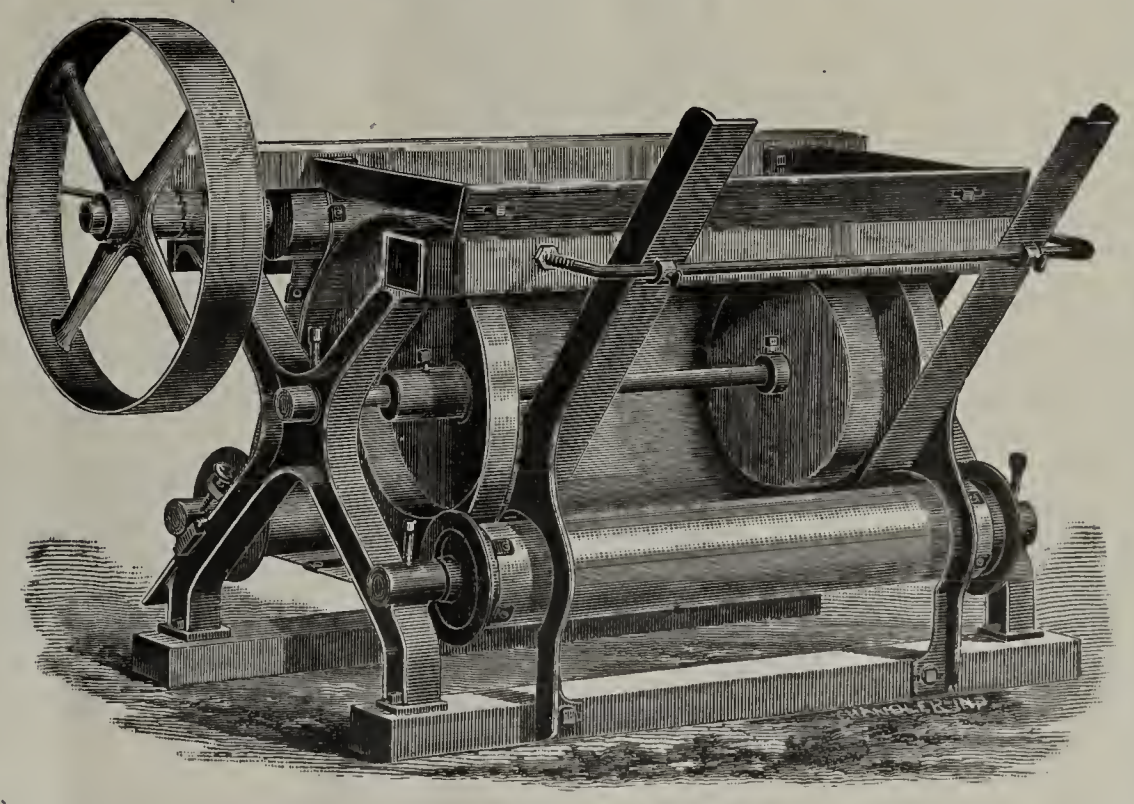
Strong and Durable,

Sands the Moulds Perfectly,

Never Strikes or gets Drunk,

Always Ready for Work,

No Brick Machine Complete without this Machine.



Patented February 5, 1889.

We make a specialty of equipping Sand Mould plants complete. We are the largest manufacturers of this class of machinery in the world. Write for prices.

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Built Right Run Right

We build Complete Outfits for Sewer Pipe Plants. We have a line of presses that cannot be surpassed in economy of operation, convenience or capacity. All necessary appliances furnished. Send for Complete Catalogue. We build **everything** needed by the Clay Worker.

Soft Mud Brick Machinery.
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Pottery and Cement Machinery.
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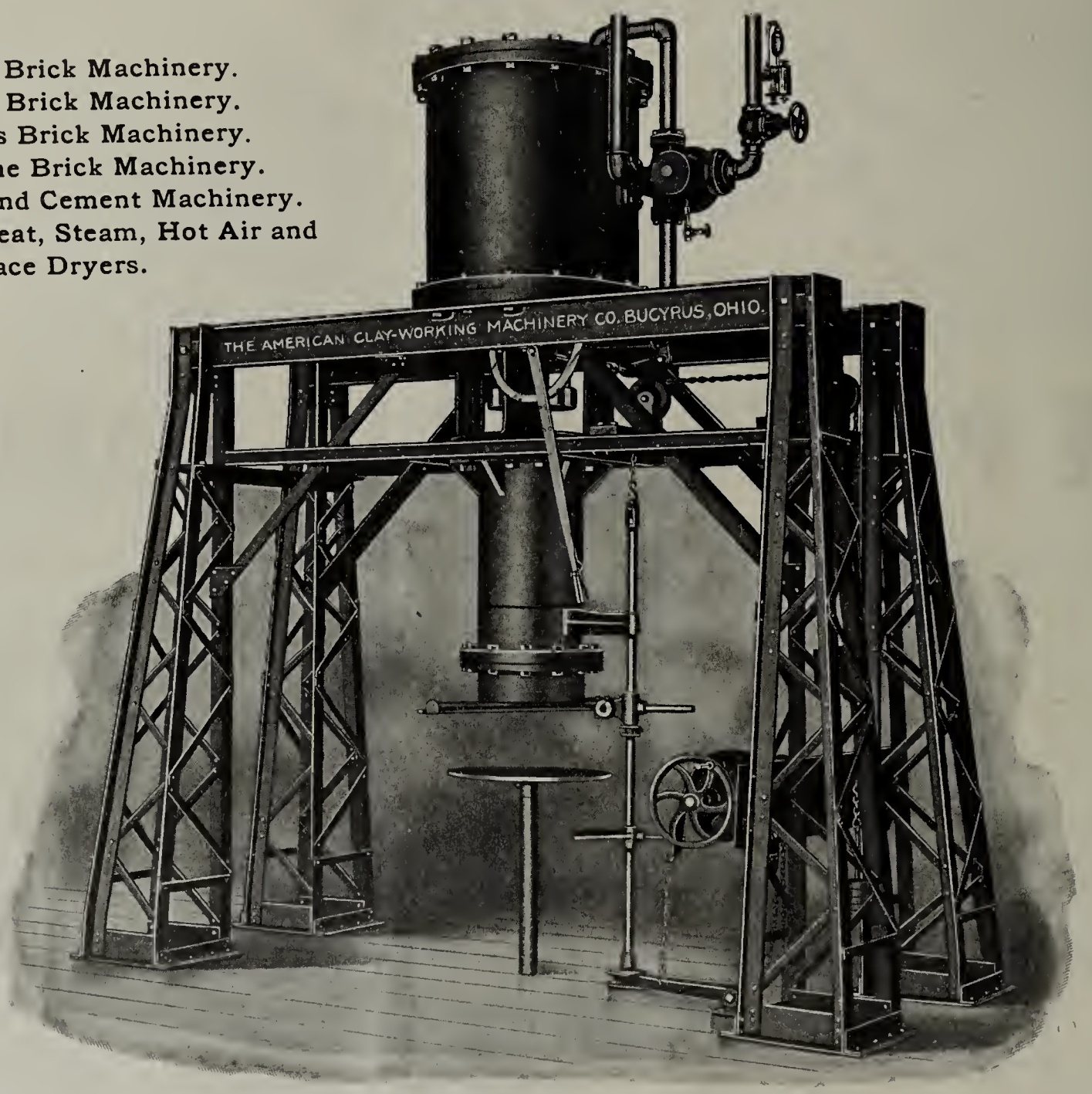

WE MAKE OUR OWN DRYERS AND CAN GUARANTEE THEM.

THE AMERICAN CLAY MACHINERY CO.

BUCYRUS, OHIO

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THE above cut shows a Jumbo Pebble Mill recently shipped to one of the largest potteries in this country.

Size of 6'0" diameter x 8'0" long.

Pebble Mills for Glaze, Frit, Enamel, Glass, Feldspar, Flint, Colors, etc.

Eighteen different sizes carried in stock ready to ship all the time.

The only firm that has made improvements on these mills in the past ten years.

Write for our 80-page catalog today.

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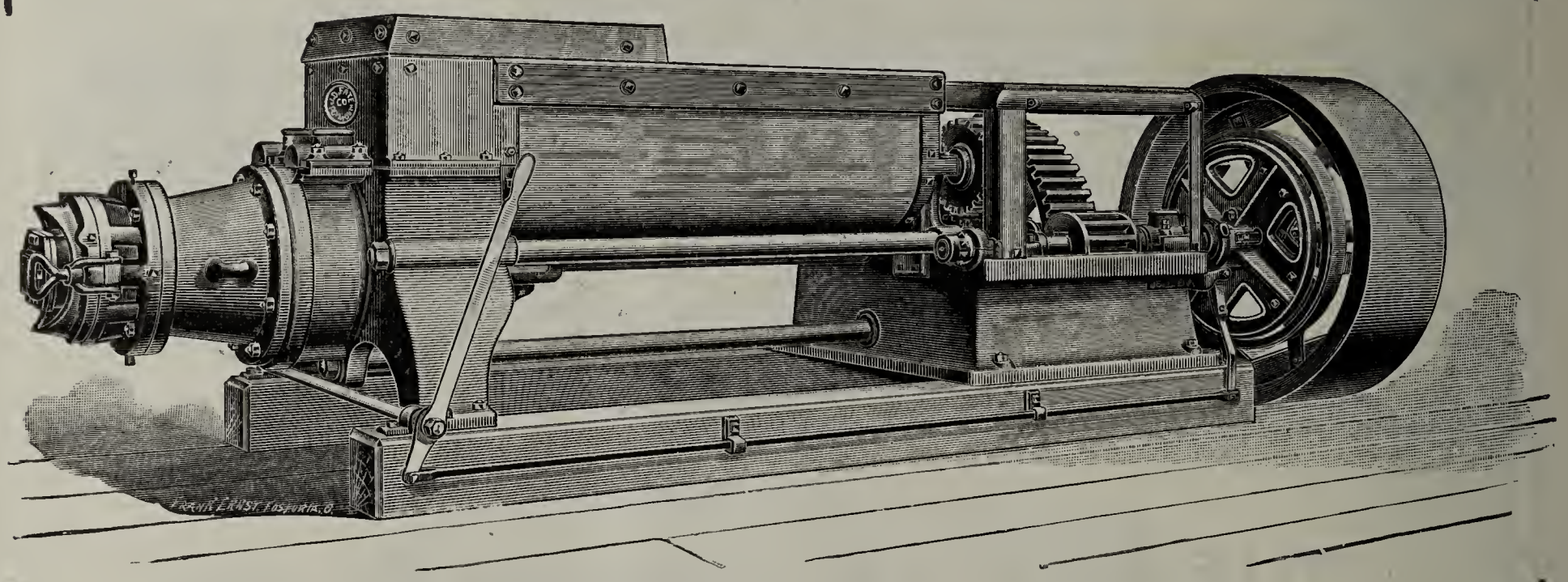
THE "PREMIER"

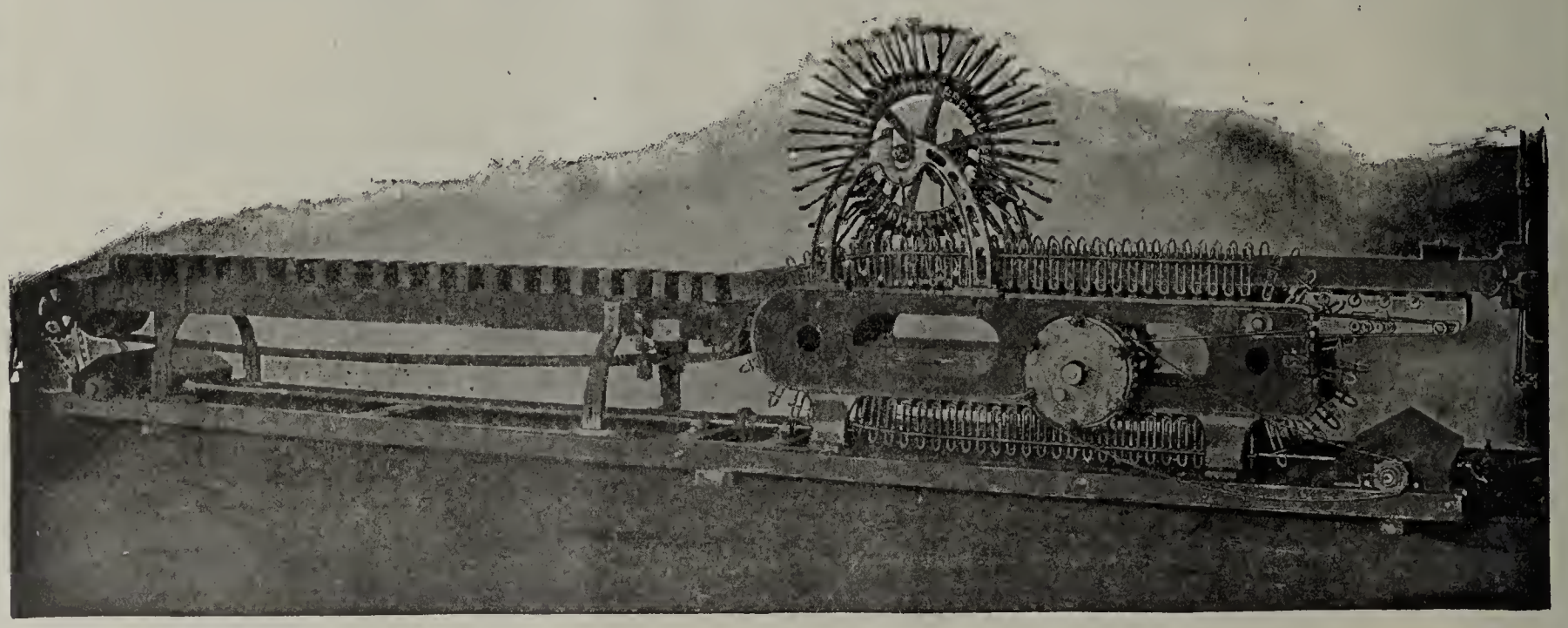
Combined Brick Machine

THE PREMIER LINE — THE J. D. FATE COMPANY

THE LARGEST LINE OF AUTOMATIC CUTTING TABLES IN THE WORLD



WITH BENSING'S AUTOMATIC SIDE-CUT BRICK TABLE.



Make a combination of Brick Machinery which is pronounced by practical brick makers to be the most perfect arrangement of stiff mud machinery now on the market.

It is unequaled for strength, durability, capacity and quality of ware produced.

Write us for catalog and full particulars of the "Premier" line of Clay Working Machinery.

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Pacific Coast: LEW THORNE, Grand Hotel, San Francisco, Cal.

CLAY RECORD

Vol. XXVII. No. 8. CHICAGO, OCTOBER 31, 1905. Semi-Monthly, $1.00 per Year Single Copies, - 10 Cents

FIREPROOF CONSTRUCTION; COMMENTS OF FOREIGN EXPERTS, COST AND SAFETY.

While there is plenty of room for criticism of American building methods, American fireproof construction is admitted to be the best in the world on account of the problems imposed by our skyscrapers. Our experts have gone further in experiments and tests to discover sound principles, and these principles are now being adopted in buildings more rapidly in this country than in any other. The New York Bureau of Buildings maintains in connection with the engineering department of Columbia University a system of testing fireproof building materials that has probably done more original investigation than any similar institution in the world.

Fireproofing from the standpoint of the man who builds a factory or business structure, is largely a matter of cost, and much of the most valuable work of investigators is toward reducing cost. In buildings of six stories or less, where plenty of exits can be supplied, slow-burning construction is considered sufficient to make them safe. In higher buildings fireproofing and fire-prevention devices are provided largely according to the reduced insurance premium. The automatic sprinkler, for example, is valued so highly after years of use, that the installation of a system will often reduce the insurance premium 35 per cent.

A building of even quick-burning material can be made reasonably slow-burning if every channel for draughts is shut off, as a fire starting in any part of it is fairly certain to be choked in the carbonic acid gas of its own production. In cities where a capable fire department exists, architects aim to build not so much a structure that will stand a prolonged attack of fire as one that will simply retard it until the firemen can reach the scene. To this end all spaces between floors and walls are abolished, and all shafts provided with automatic trapdoors. Fire walls, fire doors and shutters confine fire to small areas on the plan of the bulkheads of a ship, keep it from spreading to adjoining property, and repel attack by fire from adjacent buildings.

The true fireproof building, a type above this slow-burning construction, is one composed of materials that will stand high temperatures. Scientific tests show that the best materials of this class are hollow tile or reinforced concrete. The later is concrete plastered on steel framework, and may be either cement or what is known as cinder concrete. Various combinations of plaster have also stood the tests acceptably. Some of these materials are made under patents; others are not. Each has its advocates, and the man about to build, falling into the hollow tile camp, might be led to believe that concrete construction is downright immoral, or the reverse if he wanders into the concrete camp first. Experts who are impartial, however, say that any of the materials approved by competent, building chiefs are good in capable hands, and the owner choosing between them need consult only questions of cost. Under some conditions one may be cheaper than another.

A singular test of fireproof construction was made some months ago in a new New York skyscraper, sixteen stories high, housing a factory that uses paper, printing inks, machinery, and other inflammable material, with hundreds of employes. The architects were directed to spare no reasonable expense to make it fireproof, or, rather, what engineers term "fire-resisting," which to the layman would often seem to be the same thing. The architects, on their part, undertook to deliver such a building at the lowest possible cost per cubic foot.

"How severe an actual fire test would you be willing to put on this building?" asked the owners of the architects when the structure was finished.

"Just as severe as you will authorize," was the reply. "Tests have never been made in a building of this class."

Prof. Ira H. Woolson of the engineering department of Columbia University was authorized to conduct a test, and a testing chamber of brick was built on one of the floors. This was a square hut, 6x8 feet, with the ceiling for its roof, designed to bring intense heat to bear upon the cinder concrete protecting steel girders. The New York Fire Department sent a squad of firemen, instruments for measuring great degrees of heat were installed, and when all was ready a fire of

dry pine was started in the test chamber. In a few moments a conflagration of utmost fierceness was raging against the ceiling, and the instruments began to register extraordinary degrees of heat. One thousand degrees Fahrenheit, then 1,500 and 1,700, until finally, at the end of two hours and fifteen minutes, 2,112 degrees were recorded, which is higher than the fusing points of zinc, silver, copper and gold. Then the word was given and the firemen threw a sixty-pound stream of water into the chamber, reducing the heat in a few moments fully 1,500 degrees. The cinder concrete held under this test, while the girder which it protected was defected less than a quarter of an inch. Virtually no fractures or impairment were found.

This particular building is cited as a high example of American fire-resisting construction. Some weeks later it was inpected by three municipal fire and building experts from Hamburg, Germany, who stated that German engineers had been inclined to accept American fireproofing claims with a grain of salt until the Baltimore fire. That furnished so phenomenal a test that a commission was sent from Hamburg to examine the ruins. Typical fire-resisting buildings in various cities were also visited. The Germans found much to praise, as well as some things that were new to them. They asked, for example, how long would be required to get a pressure of water through the sprinkler system of a tall building, and were somewhat surprised when told that these sprinklers are constantly under two pressures, one from a roof tank, that also supplies a system of automatic fire hose throughout all floors, and the other from a roof tank for automatic sprinklers alone. A third pressure can be applied from the engines upon the firemen's arrival. In Germany, they explained, it is customary to rely on the latter form of protection, leaving the entire sprinkler system dry to avoid the risk of a thermostat going off accidentally and doing water damage to goods.

"How do you Americans guard against that?" they asked.

"We don't," was the reply; "a special insurance policy, costing a nominal yearly premium, covers this water risk."

Insurance authorities state that no failure of sprinklers maintained on this plan is on record. More than 80 per cent of fires are controlled with ten sprinklers, while only a moderate sized tank is needed for pressure. The average damage done by fires in the United States in places protected with sprinklers is only $250, whereas the average cost of fires where sprinklers are not installed has been estimated at $7,500.

REQUIREMENTS OF THE LAW.

Fireproof wood is specified by the New York building laws on all buildings over twelve stories high, with the result that the metropolis is using more of this material than any other city in the world. It is largely employed for floors in fireproof office structures, and for trimming. Impregnation with chemicals makes it resist fire to such a degree that it will seldom burn of itself, even slowly. Oil and varnish make ordinary wood highly inflammable, but do not affect the properties of fire-proofed wood. This material is costly and has the peculiar drawback of absorbing moisture when exposed to damp. So far as has been determined, age seems to have no effect upon its fire-resisting properties.

Fireproof partitions are built without air spaces, being of terra cotta blocks, covered with metal lath and concrete. American builders long ago got over the popular notion that iron and steel of themselves make a fireproof building, and all cities in this country with modern building laws require that metal be protected with concrete, or terra cotta. Roofs are critical danger points, because of the necessity for skylights over elevator or light shafts. A sudden rush of flame breaks these, and admits oxygen to feed the fire. Wire glass is employed for skylights, and by making shafts practically draught-proof, fire is kept from spreading to the various floors.

The cost of the building on which the fire test was made was in the neighborhood of twenty-six cents per cubic foot. This is regarded as economical in a fireproof manufacturing building of great height. Cost of fireproofing is sometimes placed at 10 per cent in addition to cost of slow-burning construction, but in reality it varies widely in different types of buildings. Construction cost increases in direct ratio to height. Fireproof buildings of ten stories can be erected for as low as 14 cents per cubic foot, while 20 cents is a liberal allowance. Large office buildings of sixteen stories cost from 30 to 35 cents. The cubic-foot cost of New York city's new Hall of Records was $1.

ANOTHER LARGE BRICK PLANT FOR OHIO.

Mr. F. N. Levans, of the Western Reserve Guaranty Co. in the Park building, Cleveland, O., has just secured articles of incorporation under South Dakota laws, granting a charter to the Walker Mining & Manufacturing Co., of Pierce, O. This company owns a valuable tract of coal and clay land near this place, and is about to erect one of the largest capacity brick and clay plants in the country. Mr. Jos. B. Weigel, managing head of the proposition, is putting in all of his time at the plant, making ready for the improvements. A noted metallurgist has made a thorough examination of the property and reports the physical properties of the clay to be second to none in the United States.

The brick manufactured by the Walker company will be the world-famed Sparta brick. The clay deposits of the old company that has been making this famous brand of brick are about exhausted. The Walker company controls practically all the remaining deposits of clay which contain the physical properties from which Sparta brick are made. Consequently the Walker Mining & Manufacturing Co. will shortly be the exclusive manufacturers of the Sparta brick. The company will also make a full line of clay insulators for electrical wiring, and has secured the services of an expert in this line to manage that department of the factory.

The company will have yards and offices located in Cleveland, Pittsburg, Chicago and New York. The capitalization of the company is $500,000. The clay deposits cover 113 acres. Mr. Weigel expects to be able to deliver brick early in 1906.

CLAY-PRESSING—A COMPARISON.

It is frequently instructive to compare problems we are studying with similar problems in other trades in order to gain ideas for their solution. A good example is that of the continuous press for wire-cuts, etc., which may be conveniently compared to a river-bed, the clay passing through it in a similar manner to water in a stream, and provided that the analogies are not pushed too far, some useful lessons may be learnt from it. Just as water can be turned in its course, or made to flow with varying speeds along different parts of its bed, so the moist clay may be guided along paths of least resistance in various directions and at differing speeds, so that it may pass out of the machine in the desired shape.

The centre of a stream of water and a band of clay from the press always, says the *Tonindustriezeitung,* travels faster than the sides. In both cases the difference in speed is due to friction. At the same time it is the object of the clayworker to obtain a band of clay which shall be perfectly homogeneous, with no part under any greater strain than the rest. In order to do this it is usual to allow the clay in its passage through the press to become more and more like its final shape, and not to expect it to suddenly alter its form by the fixing of a flat mouthpiece on the press barrel. Where this latter process is adopted defects of various kinds are sure to be met with, for to get good results the clay must pass through a long mouthpiece, and have its shape gradually altered thereby.

If parts of the band of clay, particularly the faces and corners—which are most influenced by friction in the passage of the clay through the press—have a tendency to tear or to lag behind the central parts of the band, more clay must be directed to these parts by enlarging the mouthpiece on the press side, or by rounding the corners or otherwise enlarging them. If these methods are not satisfactory the friction between the clay and the mouthpiece must be reduced by lubrication—usually with water. Just as rivers are sometimes dammed up, so the clayworker must occasionally increase the resistance of part of a mouthpiece to the passage of clay in order to secure a uniformly shaped product.

In the case of clay it is usually the centre of the band which must have speed slackened—a matter which is comparatively easy in the case of hollow goods or pipes, but which is difficult when solid objects are being made, though in this case a number of flat iron strips attached to a bow on the inside of the mouthpiece, well back, will prove effective.

The particular means to be adopted depends, of course, on the shape of the goods and on the mouthpiece used, as well as on the nature of the clay itself and the rate at which it passes through the press. General rules are of little value, for each differing set of conditions needs separate thought and treatment; but it must always be remembered that unless the clay is right no alterations in the mouthpiece will overcome defects in the preparation of the clay.

Look at all the new ads in this issue of the Clay Record. Lots of new machines and supplies to offer.

PASSED DIVIDEND ON FIREPROOFING STOCK.

At a recent meeting of the directors of the National Fireproofing company, Pittsburg, Pa., the usual quarterly dividend declaration of 1¾ per cent. on the preferred stock was passed.

In explanation of the action President W. D. Henry said that it had been taken owing to the company having been unable to sell the $2,500,000 bonds of the Federal Clay company, an underlying concern, at what was thought to be a fair price, and with which it was expected the indebtedness of the company could be wiped out. This indebtedness, Mr. Henry said, had been incurred in making improvements and purchasing new property, for which expenditures the company was not reimbursed from the earnings.

The action will not come as a surprise, as once again it is exemplified that the "tape tells the story." For weeks and even longer it has been known that the dividend would not be paid and insisted that this would be the case even had the bonds been sold, as had the bonds been sold and the dividend paid it was contended that such action would only have further tangled affairs.

However, as it now stands, earnings will be used in paying off indebtedness, but just how long this condition will continue is a matter for conjecture. Fourth avenue is the Wall street of Pittsburg—and has been for more than a year—very pessimistic on the Fireproofings, and while in some quarters it was believed that the preferred stock has sold nearly as low as it would go, others thought it would go far lower.

The National Fireproofing company was formerly the Pittsburg Terra Cotta Lumber company, which was controlled by the Henry interests. Its title was changed to the present one in 1899, and the company was capitalized at $2,000,000, evenly divided into common and preferred stock. In July, 1901, the capital was increased to $2,000,000 common and $3,000,000 preferred, stockholders having the right to subscribe for 50 per cent. of their holdings in new preferred at par, receiving a bonus of 25 per cent. in common. Of the new stock, it was said that $500,000 common and $1,000,000 preferred was used to acquire new properties.

In February, 1902, the capital was again increased by the issue of $2,500,000 common and $500,000 preferred. Later a further increase was authorized, but not issued, the proposed $2,500,000 bond issue being meant to cover such expenditures which were to be paid for by the proceeds from the last stock issue authorized.

In 1901 regular quarterly dividends of 1¼ per cent. were paid on the common stock. In 1902 and until August, 1903, 1½ per cent. was paid on it. Then it was deferred, the statement being made at that time that it was being earned, but that the directors thought it conservative to defer it because of the need of cash. On the preferred stock a regular quarterly dividend of 1¾ per cent. had been paid since the company's organiation.

Keep up to date by reading the Clay Record. It is the only semi-monthy clay journal published and costs only one dollar a year.

SAND-LIME BRICK STANDS TESTS FOR NEW YORK.

The Newburgh (N. Y.) Sand Lime Brick Co., one of the latest and most promising industries of that city, on Tuesday received a letter from A. H. Hopper, Superintendent of buildings in the Borough of Manhattan, which greatly gratified the members of the company. The same day marked the consignment to New York City of a large shipment of the yard's product.

The letter received from Mr. Hopper stated that the brick has withstood all the severe tests demanded of the brick before they were permitted to be used in New York City. This means that the Newburgh enterprise may now sell their product in the metropolitan market with the approval of the Superintendent of Buildings and his guarantee that the brick fuifill all the rigid requirements of building material.

The rules governing building material to be used in New York City are stringent. Each article to be used in the high scrapers of the metropolis must pass a test, made in the city laboratory, by an engineer who is a specialist in his particular line, and who makes use of machinery specially adapted to the purpose.

The Newburgh and Lime Brick Company, when it undertook the manufacture of its sand lime brick, fully realized that there would not be a market sufficient for all its output on the Hudson Valley, and that if they would build up a great enterprise, they must get their brick on the New York market. But to get it there, a severe test had to be undergone, and this it was not advisable to attempt until the plant was running at its best. That it is difficult to meet the requirements of the departments may be inferred when it is stated that but two makes of sand brick are thus honored, one manufactured at Glens Falls, the other by the Peerless Co., of New York City.

The Department of Buildings issue a circular which recites at great length the requirements of such building material. About two months ago the company made an application to have their brick tested and on Tuesday the company received a certificate declaring that the brick were of the highest excellence.

When the application to undergo the test has been made, the Building Department selects an engineer from its corps in whose charge the work of test is thereafter to remain. The practical test is made by Prof. Woolson, of Columbia University, thereby removing any possibility of a conspiracy to get the better of the department.

One of the requirements is that at the time the engineer visits the plant it shall be in running condition and in full operation. The engineer shall be taken to the brick on storage and from it in any section or portion the applicant for certificate shall furnish 18 bricks, as may be designated by the engineer. From these 18 bricks, three are eliminated after reaching New York, and from the remaining 15 five are selected for the test, and on their record depends the acceptance or rejection of the entire product of the yard.

At the time selected for the test, the proprietors of the yard are privileged to be present and witness the selection of the brick, also the first test applied. More than six weeks ago George R. Mitchell, Wm. T. Hilton, James S. Taylor, W. Johnson McKay and J. Ralph Hilton, comprising the Newburgh Brick Co. responded to the summons of the New York people and saw the first test.

First came the modulus of rupture, wherein, the brick having been cut in two, is placed under a crushing machine to ascertain its tensile strength per square inch. The machine used is a very sensitive piece of mechanism and the instant that a tiny crack is produced in the material under test, the machine ceases operations and the record is taken. The requirements of the department are that the five bricks tested must show an average of 450 pounds to the square inch, none to show lower than 350. The Newburgh product, according to the certificate, shows that the first break was at a point higher than the average required, while the average went to nearly 100 pounds in excess. The first break was at 485 pounds, the highest test was at 596 pounds. An average of 541 1-5 pounds. The ultimate strength of the brick, showing when the first break came on the surface of the entire brick, was 39,500 pounds for the minimum, 53,300 as maximum. The maximum load test per square inch showed 44,000 pounds before crushing as minimum with a maximum record of 62,700 pounds. The ultimate strength per square inch was 2,863 minimum, 3,651 maximum, average 3,365 1-5 pounds, the requirements being 2,500 minimum, 3,000 maximum, the Newburgh average, therefore exceeding the highest point required by the department by over 300 pounds.

Now came the freezing and thawing process. It was an extended one. The first freezing was on Aug. 25, the last on Sept 18. The brick was soaked in water for a week. The brick was weighed prior to soaking, weighed again at the finish of the test, to ascertain the per centage of decrease in weight. The test was to take them from the water tank after the week of soaking and place them in a freezer, remain in for the day, then thrust at once into water ranging from 100 to 150 degrees and there remain for an hour, to be again thrust into the freezing process. The report shows that the test was a most successful one. Three gave difference in weight at the final test, one had lost 2-10 of one per cent., another 4-10 of one per cent. Four showed no effect of the treatment, while one showed a trifling disintegration on the face.

The force test came last of all. The bricks were placed in what is termed a pyrometer, as gas furnace. The bricks were placed in the oven when perfectly cool, and the flame turned on until the record showed 1,700 degrees of Fahrenheit, at which the test was maintained for 20 minutes. During the test the gas flame was permitted to reach the brick, but the blue flame did not touch them. When the oven had been at 1,700 for 20 minutes the bricks were at once removed and thrown in a barrel of ice cold water, there to remain until thoroughly chilled. Then an examination was made, and this is what the inspector recorded on his report: The brick under the fire test became a dull red, previous to being removed and plunged in water. They came out in good condition, no deterioration as to quality, brick but slightly discolored.

Having withstood such severe handling, Mr. Hopper declared the brick good enough to be used in New York, and signed the certificate which means a great deal to the company. A private report made said that the brick had stood the test with more satisfactory results than anything that has ever been through the laboratory.—Newburgh Journal.

A COMBINATION OF WESTERN BRICK MANUFACTURERS.

Chanute, Kas., Oct. 27—The formation of a brick trust, to include all plants in the territory between the southern line of Nebraska, the northern line of Texas, the middle portion of Missouri and the eastern line of Colorado, is the latest commercial development of the Central West. The deal has been on for a year or more, and is expected to be consummated by the first of the year, at which time options on the forty-two plants already listed in the deal will expire.

English capitalists are back of the enterprise and the promotion is being made by Parks, of New York, one of whose successes was the steel trust. His chief assistant in the West is W. D. Charde, ex-secretary of the board of trade of Kansas City, Mo. It is expected that about sixty plants in all will be in the deal, and that it will take from $10,000,000 to $15,000,000 to swing it.

The plants that have expressed a willingness to enter the combine and have given options are being audited by Eastern experts. When this has been completed each plant will be appraised by other experts, and then the trust will begin to do business. It is not expected that the formation of the trust will result in an advance of prices of brick, at least at once, with but one exception, and that is in building brick. Plants all through this section have been cutting the prices.

The great benefit the brick men expect is the minimizing of expenses. The organization of this trust will no doubt cause the legislature of Kansas to sit up and take notice. The Farrelly anti-trust law of this state is a very stringent affair and it would seem that such a consolidation of the brick interest would clearly come within its provisions.

Most of the plants down in this section are said to be going in the deal. This includes plants at Iola, Chanute, Cherryvale, Coffeyville, Independence, Altoona, Buffalo, Humboldt, Neodesha and other points. The deal has been kept as quiet as possible, but the presence of auditors who are now working on the books of the companies in this section has caused information concerning the big project to leak out.

BALTIMORE WILL HAVE THE LARGEST PLANT IN THE EAST.

At a meeting of the Baltimore Vitrified Clay Company it was decided to enlarge its plant by adding to it machinery which represents an outlay of about $150,000. The company was formed in Baltimore less than a year ago and located on the south side of Spring Gardens. While manufacturing clay brick it discovered a stratum of clay which is peculiarly adapted for making vitrified paving brick. It decided to erect a plant which, when completed, will be the largest for the manufacture of vitrified brick east of the Allegheny Mountains. It will have a capacity of 75,000 brick a day and the company expects to furnish employment to some 100 to 200 additional hands. The contract requires the plant to be finished by the last of this month.

The officers of the company are:

President—C. C. Bartgis.

Secretary—H. L. Carter.

Treasurer—M. H. Carter.

Directors—Charles J. Taylor, William L. Wise, M. H. Carter, C. C. Bartgis, Moses Pels, Horace Slingluff, Frank Taylor and J. Kemp Bartlett.

BURGESS BECOMES APPRAISER.

A dispatch from Washington, D. C., states that the President has signed the commission appointing John W. Burgess assistant appraiser of the second division at the port of New York. All pottery and glassware comes under the immediate inspection of the appraiser of this division.

John Wilson Burgess is the son of the late John Burgess, of New York City, founder of the well known house of Burgess & Goddard, for many years the largest importers of English china and earthenware in the United States. He was born in the city of Baltimore 53 years ago. While still a small child his parents moved to Brooklyn, N. Y. Here he received his early education in a private school and afterward graduated from the Polytechnic Institute of that city. At the age of 19 he entered his father's business, eventually becoming the American head of the house on the retirement of his father, in 1875. During these years he had wide experience in all matters pertaining to customs affairs in relation to their imports. Some 15 years later he retired from the firm and entered the business of mining and manufacturing china clay, for the use of the American pottery manufacturers.

In 1879, while still in the importing business, he purchased an interest in the International Pottery Co., Trenton, N. J., and continued to be identified with this company for about ten years. His former home was in East Orange, N. J., and although he has been residing for several years near Wilmington, Del., yet all his family affiliations and old friendships are in New Jersey.

Mr. Burgess is well known to nearly all pottery manufacturers, being a brother of William Burgess, the prominent Trenton potter. His wide experience as an importer and his lifelong association with the pottery business abroad and in this country, should fit him for filling this important office to which he has been appointed.—Ex.

THE CLAY RECORD COMMENDED BY AN EXECUTIVE OFFICER OF THE N. B. M. A.

Editor CLAY RECORD:

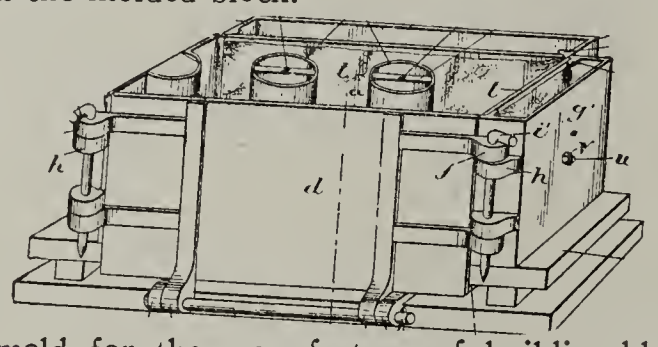
I want to commend you for one feature of your journal that seems to be peculiarly your own, and that to me is of itself worth the price of subscription. I refer to the information you give of new inventions that are of interest to clay-workers. If you would carry this a little further and describe and illustrate also such inventions as are brought out in other countries, say England, Germany and France, the value of this department of the CLAY RECORD would be much increased. I get most of this information from the *Thonindustrie-Zeitung* and frequently my first knowledge of American inventions in the ceramic industries is obtained from this source. Why our other clay-working journals do not give this information I do not understand. Whether it is because they might thereby give some one free advertising, or whether it is that their publications being monthly they must reject many things or make the journal too bulky. I hope the day will come when the brick industry in this country will have a weekly journal. The *Thonindustrie-Zeitung* is issued three times a week and it seems to me that if Germany supports this we could support a weekly edition of a journal devoted to the clay-working interests in America.

NEW INVENTIONS THAT ARE OF INTEREST TO THE CLAY MANUFACTURER.

These new inventions are those that are especially of interest to any one engaged in the line of building materials and their manufacture, or machinery to make them.

795,900. Mold for the Manufacture of Artificial Stone. George Doughty, Waterford, Canada. Filed Feb. 27, 1905. Serial No. 247,599.

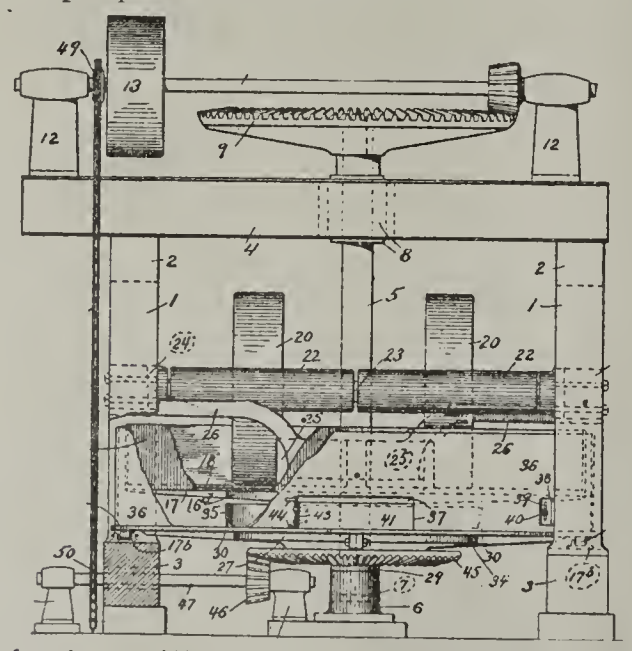
Claim.—In a mold for the manufacture of building-blocks the combination of a bed-plate, two mold sides hinged to the opposite ends of the bed-plate, and two other mold sides hinged to the opposite ends of the first-mentioned mold sides, removable means for locking the mold sides together when in their closed position, removable core members of cylindrical shapes rotatably placed within the mold and a core member for one of the mold sides to form an end groove in the molded block.



In a mold for the manufacture of building-blocks, the combination of a bed-plate, two mold sides hinged to the opposite ends of the bed-plate, and two other mold sides hinged to the opposite ends of the first-mentioned mold sides, removable means for locking the mold sides together when in their closed position, removable core members of hollow cylindrical shapes having hand-bars within them and removable covers to close their upper ends, rotatably placed within the mold, and a core member for one of the mold sides to form an end groove in the molded block.

799,039. Chasing-Mill. Harry J .Flood, Chicago, Ill. Filed Oct. 6, 1902. Serial No. 126,127.

Claim.—In a chasing-mill, the combination of a roller, a grinding-pan revolving beneath said roller, a screen in said pan, a floor beneath said pan adapted to revolve at a different speed therefrom, and a non-revoluble but vertically-movable curb resting by gravity upon said revolving floor for the purpose described.

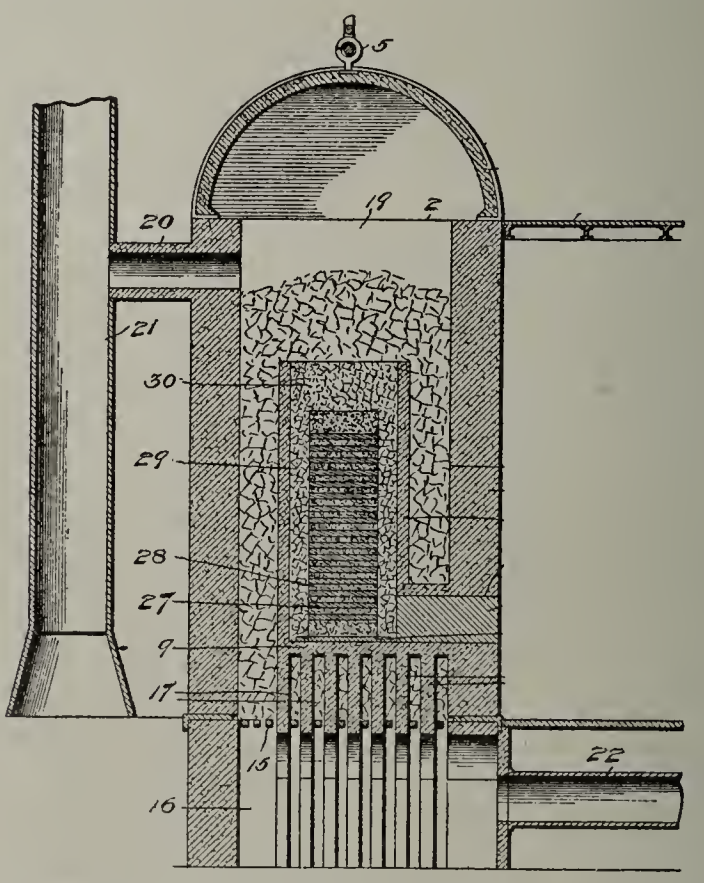


In a chasing-mill, the combination of a grinding-roller, a grinding-pan, revolving beneath said roller and having a perforate portion forming a screen, a secondary discharge-floor rotating at a different speed below said pan in position to receive the material dropping through the screen portion of said pan, an inner curb revolving with said floor, an outer non-revoluble curb, a discharg-opening in said outer curb and a discharge-scraper attached to said outer curb and freely movable toward and from said floor.

799,127. Clay-Treating Furnace. Dick B. Williams, Scottdale, Pa., assignor one-half to Joseph R. Stauffer, Scottdale, Pa. Filed Apr. 16, 1904. Serial No. 203,520.

Claim.—A furnace of the class described, comprising a closed casing having a permanent interior refractory charge-chamber, and a fuel-chamber entirely enveloping the latter.

A furnace of the class described comprising an upright covered furnace-casing provided with a fixed interior chamber of less height and width than the same, said charge-chamber being open at the top and provided with



a side test-opening at the bottom and with bracing webs in the interval between the same and the furnace-walls, a series of supporting-arches adjoining the bottom of the charge-chamber and arranged in separate relation to provide intervening fuel-spaces in communication with the fuel-spaces at the sides of the charge-chamber, and a blast connection with the furnace-casing at the bottom thereof.

798,755. Process of Hydrating Lime. Joseph Thomlinson, Portland, Oreg. Filed May 23, 1905. Serial No. 261,894.

Claim.—The herein-described process of hydrating lime, which consists in combining with the lime a mixture of water, sand, saccharin material, and a hydrocarbon combined in the proportions and manner set forth.

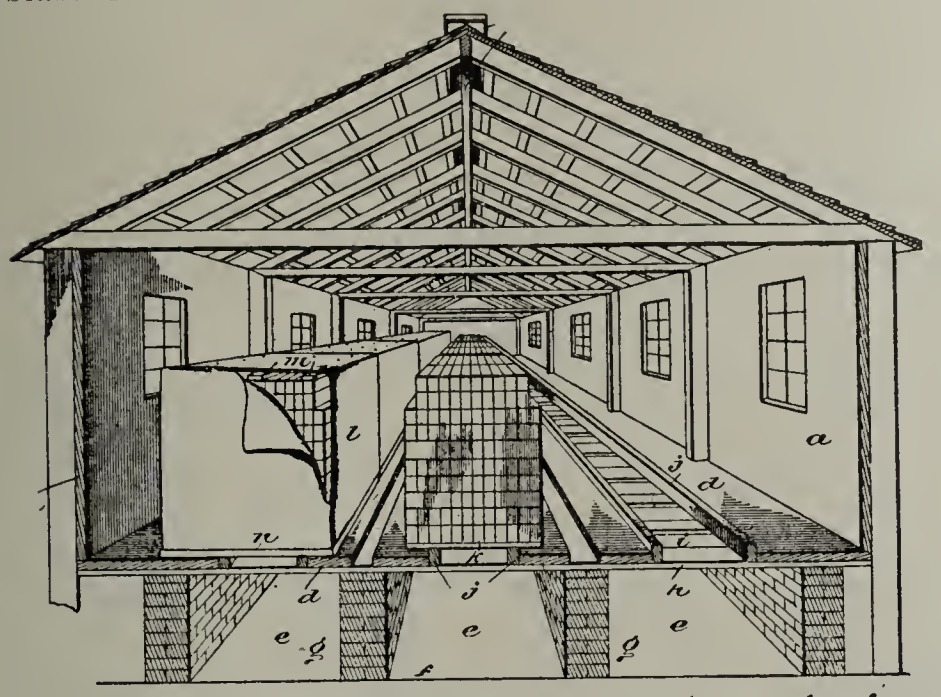
The herein-described process of hydrating lime, which consists in first providing a mixture of sand, sugar, petroleum and water, in the proportions set forth, introducing the lime to the said mixture at boiling-point, thoroughly commingling the entire mass, and then drying and screening the same.

As a new article of manufacture, a hydrated-lime product consisting of lime, sand, sugar, water, and petroleum, combined in the manner specified.

799,437. Drier. Byron E. Bechtel, Waterloo, Canada. Filed Feb. 6, 1904. Serial No. 192,273.

Claim.—In a drier, in combination, an air-flue having a top opening, means to support a row of brick-stacks along said opening, and a fabric hood or covering for said row of brick-stacks, said covering formed in sections, each section comprising a top framework, the fabric confined to said framework and having depending curtains.

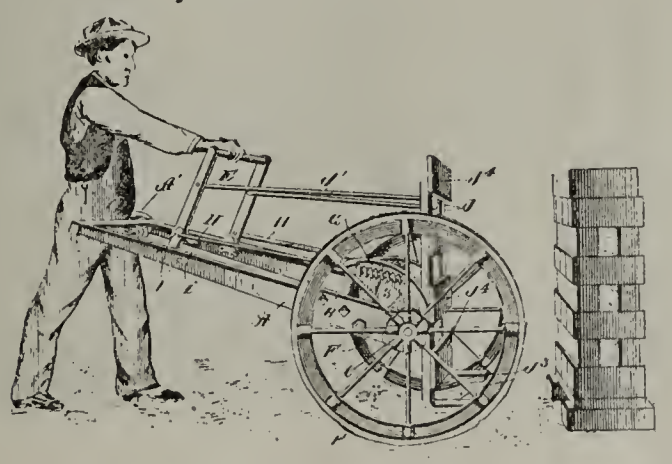
In a brick-dryer, in combination, an inclosure, means to support a vertical stack of bricks, means to maintain an upward blast of air into said stack, and a removable partially-pervious flexible fabric hood closed at the top and covering the top portion of said stack and having freely-hanging curtains around the stack, whereby the blast is smothered in the stack and forced to seek relief



by bulging out said curtains to escape thereunder from the sides of the stack, thereby forcing the air to circulate throughout all portions of the stack, said fabric taking up moisture from the moisture-laden air, whereby the porosity of the fabric is reduced, substantially as described.

799,414. Brick-Truck. Clarence M. Steele, Statesville, N. C. Filed Oct. 20, 1904. Serial No. 229,298.

Claim.—The improvement in brick-trucks herein described comprising the main frame having side bars, the wheels and the axle, the corking arms pivoted at their lower ends in connection with the main frame, the handle-lever, rods connecting the handle-lever with the rocking arms, cushioning devices for said connecting-rods, an eccentric constituting an adjustable connection between one of said rods and the handle-lever, a frame supported by said rocking lever and a brace-rod for the upper end of such frame, substantially as set forth.

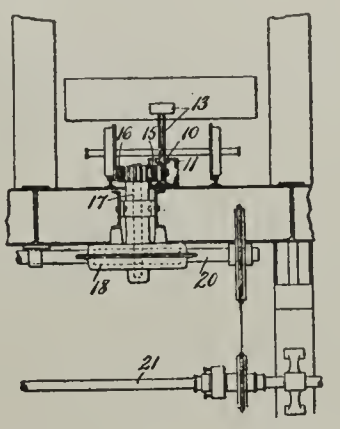


The combination in a brick-truck, of the main frame, the rocking arms, a load-supporting frame pivoted to the rocking arms and having a portion projecting above said pivot, the handle-lever, rods connecting the handle-lever with the rocking arms, means for adjusting the connection between one of said rods and the handle-lever, and brace-rods for the upper end of the load-supporting frame, substantially as set forth.

799,322. Car-Pushing Mechanism for Tunnel-Kilns. Albert A. Gery, Reading, Pa. Filed Oct. 12, 1904. Serial No. 228,127.

Claim.—The combination with a tunnel-kiln having a car-track extending beyond the introduction end thereof, of a car-pushing mechanism comprising a suitable-guided reciprocating pusher-bar located between the extending track-rails and a pusher-arm carried by said bar and arranged to swing in a vertical plane so as to engage or pass beneath a car placed in its forward and rearward travel respectively.

The combination with a series of parallel tunnel-kilns having car-tracks extending beyond the introduction ends thereof, of a car-pushing mechanism comprising a series



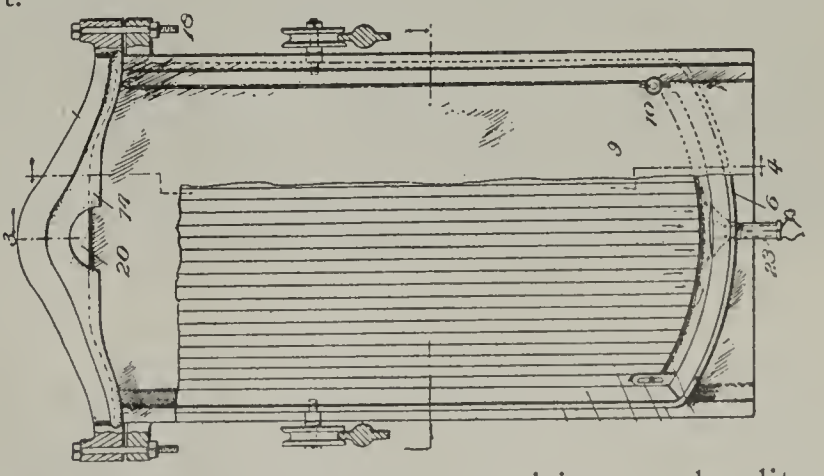
of parallel guideways located respectively between the extended track-rails, a pusher-bar in each of said guideways carrying a pusher-arm having limited swing, and a common operating-shaft for said pusher-bars with separate connections to the latter.

783,797. Making Fire-Brick. Sheldon Norton, Watervliet, N. Y. Filed Jan. 14, 1903. Serial No. 139,052.

Claim.—1. That improvement in the art of making fireproofing and the like, which consists in tempering, granulating and imparting hydraulicity to blast-furnace slag by running the same while molten into water; reducing the tempered and granulated slag to powered form; mixing a small percentage of hydraulic cement with such powdered slag to accelerate hydration, forming a thick paste by the addition of water to the mixture, molding the paste into desired form, and imparting to the molded article the required degree of hardness by the application of water.

799,417. Press-Filter. Cassius C. Thompson, East Liverpool, Ohio. Filed Dec. 7, 1904. Serial No. 235,857.

Claim.—An improved leaf or section for press-filters adapted to receive a continuous strip of filtering-cloth, the said section provided with a recessed surface surrounded by straight projecting edges at two sides and one end, and the opposite end concaved to form a passageway to the said recessed face, and compressible members, engaging this end of the said section for making a tight joint.



An improved filter-press, comprising a plurality of sections having sides provided with grooved recesses, a filtering-cloth passing around each of the sections, the upper end of said sections cut away and forming elongated openings extending across the entire upper end of the sections and communicating with said grooved recesses, and hollow members clamped to the upper end of said sections and closing the openings between said members.

THE PLANT OF THE VERDIGRIS VALLEY VITRIFIED BRICK & TILE CO.

The plant of the Verdigris Valley Vitrified Brick & Tile Co. is located 4½ miles south of Neodesha, Kansas, on the Missouri Pacific railroad. It is in what is known as the Verdigris Valley (from the Verdigris river) just now becoming noted for numerous plants turning out the finest brick in the world.

This plant is at the foot of what is known as Crowe Hill, a mound of solid shale. In the three years that the plant has run, turning out 50,000 brick a day, only a commencement has been made on the vast amount of choice blue shale. The plant is less than 300 feet from the shale pit—the pit, however, is not a pit at all, but is enough higher than the plant to run the shale cars by gravity alone. No cable or hoist of any kind is used. The cars are easily pushed back to the pit after being dumped. At present a shale face 85 feet deep is exposed.

Everything works like clock work around the plant. The complete equipment was installed by the American Clay Machinery Co., of Bucyrus, O. It consists of a 9-foot dry pan for grinding the shale, a 10-foot pug mill, a No. 1 Giant auger brick machine with a side cut oscillating cut-off table, two double Eagle represses, 200 dryer cars, etc. There are three dry sheds with a capacity of 210 cars of 600 brick each, or a total of 126,000 brick. Seven up-draft kilns are now in use.

The plant burns natural gas for fuel, the cost for the plant being only about $30 a day. About 45 men are employed and the pay roll is about $2,500 a month, though the men are paid in cash every Saturday. Over half the workers at the plant are colored and the burner is a colored man. Strange to say, this force of workers is very efficient. No drinking or carousing is allowed and harmony prevails to an unusual degree, nearly all the employes living in houses clustered around the plant and mostly owned by the company. The negroes have religious services twice a month. They also have what they call the "Batless," a sort of lodge, held in a building they built themselves of imperfect brick and old boulders.

Lew Wentworth's Special Train of Neodesha Vitrified Brick for Omaha.

The company owns 37 acres of ground. The stockholders are all Neodesha men. J. B. Keys is president, A. H. Black, secretary and treasurer, and J. W. Bogue, manager. The opening up a market for Neodesha brick was up for consideration recently and Lew Wentworth, of Omaha, Nebraska, was chosen sole representative for Nebraska and Pottawatomie county, Iowa. His keen business ability soon resulted in the shipment of not only car loads but train loads of brick, the first of which is herein illustrated, arriving in Omaha, August 14, 1905.

Plant and Houses for Workmen of the Verdigris Valley Vitrified Brick Co.

The Working Crew of the Verdigris Valley Vitrified Brick Co.

Building brick, sidewalk brick and paving brick are manufactured. The superiority of these brick over the Omaha product was at once so apparent that the city of Omaha is using them for sidewalks and sewers. The first concrete building to be erected in Omaha is using the Neodesha corrugated brick for ceilings, and Mr. Wentworth now has orders for several millions of Neodesha brick, shipment of which is being made daily. The second train of 24 cars were shipped to Mr. Wentworth October 15, 1905.

Mr. Wentworth's energy and enterprise have won for him the distinction of being the first man to ship brick into our city by the train load, and to fill all orders he now has of pressed, repressed, paving, common and sidewalk brick will require several trains of the size illustrated here.

The specially designed corrugated sidewalk brick being used in Omaha city contracts are furnished by him.

Mr. Wentworth's advertising trade mark of the owl, with the characteristic motto, "Listen to My Hoot," is familiar to not only the citizens of Omaha, but throughout the entire state and surrounding territory. It conveys the information that the wise will hear his prices before purchasing.

CLAY RECORD.

PUBLISHED SEMI-MONTHLY BY THE

CLAY RECORD PUBLISHING COMPANY,

Ninth Floor, Plymouth Building,

303 Dearborn Street,

CHICAGO.

GEORGE H. HARTWELL, Editor.

SUBSCRIPTIONS.

Send One Dollar bill or stamps for United States, Canada or Mexico and one dollar fifty cents for all other foreign countries.

Papers are not stopped at the end of subscriptions unless the subscribers order them so and pay up the arrearages.

ENTERED AT THE CHICAGO POST OFFICE AS SECOND-CLASS MATTER.

Vol. XXVII. OCTOBER 31, 1905. No. 8

"I like to read American advertisements. They are in themselves literature, and I can gauge the prosperity of the country by their very appearance."—William E. Gladstone.

When times are dull and people are not advertising is the very time that advertising should be the heaviest. Ninety-nine out of every hundred merchants advertise most when there is least need of it, instead of looking upon advertising as the panacea for their business ills.—John Wanamaker.

CONVENTIONS.

The twenty-eighth annual meeting of the Illinois Clay Workers' Association will be held in January.

The sixth annual meeting of the Wisconsin Clay Workers' Association will be held at Menominee, date not set.

The twenty-sixth annual meeting of the Iowa Brick & Tile Association will be held in Des Moines January 10th, 11th and 12th, 1906.

The fourth annual meeting of the Ontario Clay-Workers' Association will be held at Hamilton, Ont., December 13th and 14th. Headquarters will be at the Royal.

The second annual meeting of the National Association of Manufacturers of Sand Lime Products will be held at Detroit, Mich., December 5, 6 and 7, 1905. Headquarters at Hotel Cadillac.

Good advertising is news.

Once there was a poor man who attended strictly to his own business—and today he is rich and happy.

Brush away cobwebs from the dark corners of your brain, fill the spaces with the light and air of knowledge.

To do the greatest good we must have the greatest power. Power cannot be considered as a single force. It is a thing of numberless causes acting in harmony to produce a given effect.

The Clay Record is the only semi-monthly clay journal in America. The subscription price is only one dollar for a year. Can you afford to be without it?

The Exposition seems to have passed out of the special and spasmodic semi-occasional, into the common and regular event, and each succeeding year having one.

Perhaps our readers are aware of the coming International Exposition at Milan, Italy, to be held in Milan from May to November, 1906, in order to appropriately celebrate the Simplon Tunnel, one of the greatest known triumphs of engineering.

It will be the largest European Exposition ever held outside of Paris. Elsewhere in this issue the reader may find a few facts about it and will find them interesting.

It does not seem that it was so long ago when we were in the midst of the convention season; that the flight of time meanwhile admonishes of another season rapidly coming, but so it is, and we remind our readers of the National Association of Sand-Lime Products and the Ontario Clay Workers Association Conventions to be held in December, 1905.

The value of the convention to the progressive manufacturer was never acknowledged and appreciated as at the present time. The benefits gained by the wide awake, up-to-date business man renders the expense incurred by attendance a mere bagatelle in comparison.

The advertisers in THE CLAY RECORD cannot by any nonsense accuse us of entertaining any interior motive in these remarks on outdoor advertising because they with a few advertisers in other lines have never indulged in it.

The methods of securing publicity are many, the matter being a subject of deep and constant study, and pointed and impressive testimony as to the value of these methods is therefore valuable and sought for. A recent annual report of the American Scenic and Historic Preservation Society furnishes some very interesting information. During a recent period many letters were sent to some of the largest advertising concerns in the United States inquiring as to the amount spent by each in outdoor advertising and the estimate placed upon the value and effectiveness of such advertising.

The answers received will surprise our readers and advertisers equally with ourselves and at the same time shed much light on a hitherto much disputed point. One concern spending nearly half a million dollars a year for advertising purposes now devotes only five per cent of this amount to out-

door advertising and expresses a doubt whether even this amount yields any profit.

Another concern doing about the same in amount of advertising, and appropriating the same percentage as above mentioned has been so disappointed in the results that it has given up the outdoor method entirely. We have always thought this outdoor advertising or display had no value other than to attract the ignorant or illiterate class, certainly not to reach the intelligent, and in this report it seems to be admitted or acknowledged by several concerns spending large sums in this kind of advertising. And it is also stated that one concern whose appropriation for advertising is nearly a million a year, spending nothing at all in outside advertising in this country and Canada, but does employ this method in Cuba. We know the population of Cuba is largely illiterate. This tells its own story, and practically proves that to reach intelligent buyers the columns of the proper kind of newspaper, magazine or trade journal is the channel for advertising that will yield returns and prove to be a profitable investment.

ACCIDENTS, DAMAGES AND LOSSES.

While cleaning a gun, Charles Farr, a watchman for the Utah Fire Clay Co., Salt Lake City, Utah, shot himself.

The West Market Street Brick Co., Louisville, Ky., has made an assignment. Assets and liabilities both $8,000.

James K. Everson, Crawfordsville, Ind., has suffered a complete nervous collapse and is now in a private sanatarium.

John W. Pertz, a stockholder in the Union Sandstone Brick Co., Lafayette, Ind., filed a petition asking for a receiver of the company.

R. V. L. Day, a brick manufacturer at Douglas, Ga., had seven pieces of scull removed as a result of a negro workman striking him on the head.

J. W. Prall a brickmaker of Medford, Oregon, reputed to be worth $75,000, was convicted of conspiring to secure the property of Mary A. Latham.

A. W. Harding, an engineer at the Hennessey (Okla.) Brick Works, lost his right arm while trying to put rosin on a belt to keep it from slipping.

K. Hikida is plaintiff in a $25,000 suit for damages against the Puget Sound Brick Co., Tacoma, Wash., alleging that he was injured while employed at the brick yard.

Flood water running into the hot kilns of the Laclede Fire Brick Co.'s plant at St. Louis, Mo., caused an explosion and damage to the amount of $20,000 to the plant.

Suit has been filed against the Greer-Beatty Clay Co., Magnolia, O., for damages in behalf of B. Smith, an employe, who was hurt on one of the company's mine cars.

The firm of Ammann & Wood, Oklahoma City, Okla., has made an assignment. The liabilities are $17,000 and assets $16,000. The firm has been doing a good business and went in a little too deep.

The George C. Murphy Potterv Co., East Liverpool, O., has settled the damages with the Pennsylvania Ry. for $25,000. The company allowed their train to stand on the track before the buildings while they were burned so that the engines could not reach them.

FIRE! FIRE!! FIRE!!!

Damage by fire to the extent of several hundred dollars has been done to the plant of Michael Goss, at Iowa City, Ia.

The Eubanks Press Brick Works at Paris, Texas, one of the largest in North Texas, was partially destroyed by fire.

An overheated brick kiln owned by the Rochester (N. Y.) Composite Brick Co. did damage to the extent of $1,000 to the plant.

Property of the Kelly Island Lime & Transportation Co., at Marblehead, Ohio, to the value of $20,000, was destroyed by fire.

Fire destroyed two brick sheds of the Superior Brick Co., 3100 So. Kings Highway, St. Louis, Mo., and caused a loss of $10,000.

The new brick works of the Hummelstown (Pa.) Brownstone Brick Co., at Waltonville, was completely destroyed by fire, causing a $50,000 loss, fully insured.

The plant of the National Dry Kiln Co., Indianapolis, Ind., suffered a $10,000 loss by fire. The plant is fully insured and orders will be supplied without any delays.

The plant of the Kier Fire Brick Co., at Salina, Pa., suffered a loss by fire amounting to $1,200. The fire started in the drying tunnels. Home office is at Pittsburg.

The Peters Fire Brick Co., at Coal Grove Sta., Ironton, O., was completely destroyed by fire, causing a loss of $10,000 with no insurance. New machinery had just been installed. John Peters, Jr., is the secretary. The plant will be rebuilt at once.

AMERICAN FIREPROOF MATERIALS FOR ENGLAND.

American fireproofing methods are about to be employed in London, Eng. The National Fireproofing Company of New York has secured a number of contracts for the fireproofing of theatres, warehouses and other large buildings in the British metropolis. The carrying out of the work will mark the first introduction of American terra cotta fireproofing in Europe. The terra cotta will be shipped from the company's Perth Amboy (N. J.) plants. The contracts, which were allotted after the American process was subjected to the tests of the British Fire Prevention Committee, are for reinforced terra cotta fireproof floor arch construction. This system, which is extensively used throughout this country, consists of hollow tiles of burned clay material, with a reinforcement of metal in the form of a wire truss. The test, which was the first one to be conducted at the British authority's new testing station in London, was attended by a large number of the leading fire insurance officials and fire brigade officers who came from various parts of England and the continent for the occasion. H. M. Keasby, vice-president of the National Fireproofing Company, stated that he had just received word from the other side to the effect that the British Fire Prevention Committee had also subjected the company's thin terra cotta partition to a long fire trial and that the test had been so successful that the partition had been classed by the committee as affording "full protection" class "A" of the standard table for fire resisting partitions and that several contracts are expected to be closed very shortly as a result.

HUMMELSTOWN BROWNSTONE CO.' BRICK PLANT IN OPERATION ONLY ONE DAY.

The new brick works of the Hummelstown (Pa.) Brownstone Company, put in operation for the first time Oct. 19th, caught fire at 2:30 o'clock Oct. 20th from an unknown cause, and was destroyed. The loss was $50,000, with $40,000 insurance. The plant was one of the greatest industries of Hummelstown, and its destruction will leave 45 men without occupation. The plant will probably be rebuilt without delay.

The buildings situated at Waltonville, two miles from Hummelstown, were guarded by two watchmen. They reported that they had first seen flames at the end of the main building. The building was equipped with fire hose with water under pressure, also with hand extinguishers, but in spite of the watchmen's efforts the flames spread beyond their control, and by the time they had aroused the workmen of the plant, who live in nearby houses, the building was doomed.

The structure was entirely wood. Its shape was irregular, several buildings being connected. The height ranged from one-story to three. In building it, 200,000 feet of lumber was used. The great heat from the fire ruined the expensive machinery.

The plant contained the sand-lime brick factory, a sand plant, and a stone plant, the latter two for supplying concrete jobs. The sand and stone plants had been in operation only two weeks, and the brick works, the principal department, turned out the first finished product the day before.

Brickmaking at the new plant was by an entirely new process, and by utilizing the waste brownstone of the quarries was a most important money saver. Only the most improved machinery was installed. From the time of the arrival of the stone till the brick were turned out, the material was not handled, belt carriers being used to transport the material from one machine to the next.

The officers of the Hummelstown Brownstone Company are: Allen K. Walton, president and treasurer; Robert J. Walton, general manager.

LEE GETS BRONZE MEDAL.

S. C. Lee, president and treasurer of the Lee Lumber company and principal owner of the Iowa Brick Manufacturing company, Des Moines, Ia., received the bronze medal and diploma awarded by the St. Louis exposition international jury of awards for the second best paving brick and hollow blocks shown at the exposition. The first prize was a gold medal and diploma and the third prize a silver medal and diploma.

The diploma is a handsome one, with a striking design, and is signed by President David R. Francis and Secretary Walter B. Stevens, as well as the jury on awards.

RICKETSON MORTAR AND MINERAL COLORS.

The question of colors for mortars has been settled by the Ricketson Mineral Paint Works at Milwaukee, Wis. This company is one of the largest in the world to make colors of all kinds. They received the highest award at the St. Louis Exposition for strength, durability and quality. The company has mines on Lake Superior and a mill at Bay View and are prepared to furnish all kinds of orders for coloring mortar or for making hollow blocks. They enjoy a large trade in the latter. Colors for clay, cement and sand-lime brick as well as clay pressed brick are also a specialty. Write to them direct for information.

THE INTERNATIONAL EXPOSITION AT MILAN.

The completion of such an enterprise as the Simplon Tunnel—one of the greatest known triumphs of engineering—is worthy of all the recognition, and more it may receive through an Exposition.

It will be the largest European Exposition ever held outside of Paris.

In the transportation section, retrospective exhibits will show the historical development of the various methods of travel.

The dominant feature will be motion. All products, as far as possible, must be shown in connection with the processes, thus filling the halls with *live* exhibits.

Arrangements will be made for field tests and competitive trials in all classes where it is expedient.

An entire pavilion will be devoted to the automobile display, and the display will be made an especial feature.

The marvelous industrial and economic development of the kingdom during the past decade has made Italy the best European market for those products that the United States can well supply.

This prosperity places at the disposal of the people the means to purchase amusements as well as the necessities of life. Consequently a large attendance at the Exposition is confidently expected.

One large building will contain all forms of welfare work, grouped under the several heads: Mutual assistance and insurance, co-operation, savings institutions and popular credit, protection of labor and insurance against enforced idleness.

Milan is the center of the most productive section of Italy. Its population is one and a half million, while Lombardy, no part of which is more than three hours distant, has nearly five million inhabitants.

Genoa, the port of entry, is less than one hundred miles distant. The cost, therefore of transporting exhibits from the United States will be comparatively cheap. (For rates apply to the North German Lloyd S. S. Company, 5 Broadway, New York City.)

Owing to the fact that a large proportion of the labor is employed in the shops and factories, there is available only a small number of food producing workmen. This makes it imperative that supplies be secured from abroad. The authorities of the Exposition recognizing this condition will inaugurate about June 15, a special Food Show. It will be well for the American producers of food stuffs to profit by the opportunity to display their products.

For further information or for terms of space, application should be made to J. H. Gore, George Washington University, Washington, D. C.

LEASED SITE FOR CEMENT BRICK MACHINERY PLANT.

J. H. Emery has leased several lots on William street, just south of the C., S. & M. freight depot, at Bay City, Mich., where he will soon begin the erection of machine shops, foundry and other buildings for the manufacture of the Emery cement brick machine, of which he is the patentee.

Mr. Emery has a 10-year lease of the property and besides brick machines he will manufacture building blocks, brick, hitching posts, etc., giving employment to quite a number of men.

Straight Bros., Spencer, Iowa, will install a machine in their plant to separate the limestone from the clay.

THE ONTARIO CLAY-WORKERS' ASSOCIATION TO MEET AT HAMILTON.

The executive committee of the Ontario Clay-Workers' Association, which will hold its annual convention at Hamilton, Ont., on Dec. 13 and 14, met at the Royal hotel, and made arrangements for the meeting. It is expected that about 100 delegates will attend. The association is composed of brickmakers, sewer pipe makers, potters, and tile pipe makers. Three conventions have been held previous to this year, the last one being at Waterloo.

At the coming convention subjects of interest to the trade will be discussed, and it is likely that the association will be made national instead of provincial, and will style itself the Canadian Clayworkers' Association. Delegates from the Atlantic to the Pacific will be here, and the Royal will be the headquarters. On the evening of the last day, a grand banquet will end the proceedings, at which each man will be given a chance to show what kind of clay he is made of. The officers, at present, are:

George W. Moody, Highgate, president; R. J. McCormick, Warwick, vice-president; C. H. Bechtel, Waterloo, secretary.

THE PRICE OF BRICK AT TOLEDO.

The Toledo Brick Supply Co., which is the selling company for the Toledo, Ohio, brick manufacturers, has increased the price of all grades of the building material from 25c to 50c per thousand. The common or building brick is now $7 per thousand, an increase of 50c over the old price. Hard or foundation brick is quoted at $7.50, a raise of 25c. The other prices in the circulars sent out are as follows: Sewer or paving brick, $7.75; face brick, $8.75; round corners or angle brick, $9.50; round corner brick for inside, $8.50. A discount of 25c per thousand will be allowed on all bills paid at the office of the company on or before the 10th of the month following the month of delivery.

The causes assigned for the increase are the great consumption following the local building boom and the scarcity of common labor. One of the local manufacturers said that owing to the unprecedented demand for laborers several of the plants found it almost impossible to continue operations and that the inexperienced help increased the cost of production. The prices now, however, are only what they were previous to the cut two years ago.

The local consumption this year has been so great that manufacturers did not find it necessary to slaughter prices in the surrounding towns in order to get rid of their surplus, for, as a matter of fact, they have no surplus although the building season is about over.

If the building boom continues next year Toledo manufacturers will be obliged to exert themselves to supply the demand.

AWAITING REPORT ON CLAY DEPOSIT.

The Rockdale Powder Company, whose plant is at Hoffmanville, Sixth district, Md., will effect a reorganization when the report of Dr. Edward B. Matthews, assistant geologist of Maryland, is made in the fire clay deposits recently discovered on the property. The clay has been analyzed by Professor Menges, of Pennsylvania, who pronounces it to be superior to the clay that is imported from Germany.

While digging for the clay valuable deposits of other minerals were discovered, which are said to contain gold, silver and copper values to the extent of $20 a ton.

The capital stock will probably be increased so that large brick plants can be erected.

JEFFREY MINING MACHINERY.

Bulletin number 10 of the Jeffrey Mfg. Co., Columbus, Ohio, is out. It is very complete in electric mining machinery of all kinds. If your plant is big enough to consider a proposition of this kind look no further for the proper persons to install it.

On page 45 of this issue is advertised another class of work made by this well-known concern, which deals in elevating, conveying and transmission machinery for moving anything.

WOULD WILLINGLY HAVE SEVERAL MORE TRIALS.

Joseph Turner, who owns a brick yard near the Highland Boy smelter, at Salt Lake, Utah, would probably be willing to take two or three more trials of a condemnation suit against him by the Oregon Short Line Railroad company, if the amount of damages allowed him should increase in the same proportion as has been the case in three trials had already.

A jury in Judge Lewis' court allowed Turner $500 for the value of land taken and $5,000 in the way of damages to his business. On the first trial of the case Turner was allowed a total of $1,400. An appeal was taken, resulting in a reversal and a new trial. On the second trial a verdict for $2,600 was allowed. Another trial was granted, with the result as stated, thus being a doubling of the amount of damages on each trial.

The railroad company began condemnation proceedings against Turner, giving bond in the usual way, and then built its track across his brick yard. The case has dragged along for two or three years.

POTTERY COMPANY SETTLES DAMAGE CASE AGAINST PENNSYLVANIA CO.

In the United States circuit court the case of the George C. Murphy Pottery Co. vs. the Pennsylvania Company and others was settled for $25,000. The case arose over a fire that broke out in the pottery company's plant located at East Liverpool, Ohio. A train held a crossing longer than the law allows, causing what was alleged to be more damage than there would have been had the fire department been able to respond immediately. The damage claim was $105,000.

BRICK YARDS OF THE O. E. REIMER CO. SOLD TO JOHN H. MAHNKEN CO.

The O. E. Reimer Company, at Grand and Stagg streets, Newtown Creek, Brooklyn, N. Y., covering an area of twenty acres, have been sold to the John H. Mahnken Company.

It has been rumored that negotiations for this deal have been pending, and there has been much talk at the Building Material Exchange in consequence. It caused much comment for the reason that the O. E. Reimer Company was the largest of the brick dealers in any of the five boroughs, and the additional fact, that if consummated, the deal would remove for the brick trust the last and most formidable independent operators.

It is said that the consideration was $500,000. O. E. Reimer, the active member of the old company, will retire and devote his time to other interests. As an employer, Mr. Reimer was ideal, with a thought always for the welfare of his employees, and his last act was a stipulation in the bill of sale that all of the old employees shall be continued at the same salaries.

SAND OR LIME-BRICK OR BLOCK NEWS.

Papillion, Neb., is to have a cement brick and tile plant. Tower & Berkandt are the proprietors.

Marinette, Wis., business men have closed a deal for a piece of land upon which to build a sand-lime plant.

Prof. E. Haworth, Lawrence, Kansas, is investigating the new sand-lime brick which are being made at Wichita.

The Federal Granite Brick Co. has started its plant at Sayre, Pa. This plant is a branch of the large one at Scranton.

S. J. Warren, of Brinson, Ga., will build a cement brick plant at Bainbridge, on the west side. The site has already been bought.

M. L. Hurst representing the Fernholtz Brick Mchy. Co., St. Louis, Mo., has closed a deal with Davis, Ind. T., capitalists for a sand asphaltum paving brick plant.

The Hummelstone Brownstone Brick Co., Waltonville, Pa., will rebuild their plant which burned as soon as loss is adjusted. Plant had been operated only one day.

Messrs. Alport & Ray, of Detroit, are considering the establishing of a chemical sand brick plant at St. Clair, Mich. Ex-mayor J. W. Inches is interested in getting the plant started.

Gordon & Son, proprietors of the Weiser (Idaho) Brick Works are considering the brick plants in other sections of the state and Lewiston is being considered for a sand-lime brick plant.

The Ames White Lime Co., Harrison, Ark., has been incorporated with $50,000 capital stock to make white lime and brick. Incorporators, F. H. Perry, C. S. Hutchinson and Frank Warning.

The Sugar Grove (O.) Brick Co., has now turned out its first sand brick which are pronounced perfect in shape and beautiful in appearance. Supt. Timmons is delighted with the results.

Land has been purchased from Marcus S. Wright at South River, N. J., and a very large sand-lime brick plant will be built at once. Some of the largest engineers and contractors of New York are interested.

The Kansas City (Mo.) Cement Brick Co. has filed an assignment turning over all its property to I. T. Goodman for the benefit of its creditors. H. J. Alexander is the president and the total assets are fixed at $2,087.

The Lorraine Sandstone Brick Co. has been incorporated with $125,000 capital stock by J. D. Moon and Frank Lyon of Plainfield, N. J. and Ethan A. Westfield of New York City. The principal office is in Lorraine, N. Y.

The Shelby Granite Brick Co., Memphis, Tenn., has been incorporated with $50,000 capital stock and will be the second sand-lime works for Memphis. Robt. N. Enon will be the manager, and the plant will be built on Paine Ave.

The West Virginia Silica Block Co., Wheeling, W. Va., has been incorporated and will manufacture sand-lime brick. Capital stock $100,000. Emil Hallgren is president; K. O. Yertzell, vice president and S. M. Baird, secretary and treasurer.

MISCELLANEOUS ITEMS.

W. C. Barker, Mason, Mich., has exchanged his brick yard to Dell Kipp for a farm.

The Bessemer (Ala.) Fire Brick Co. will move their office to Ensley at an early date.

S. L. McLaurin, Brandon, Miss., wants information and catalogues of brick making machinery.

W. H. King of St. Johns, Oregon, has sold his interest in the St. Johns Brick & Tile Co. to C. H. Moxon.

The Woodson Brick Mfg. Co., Carrollton, Mo., has increased its capital stock from $5,000 to $10,000.

F. H. Schultz, Traynor, Iowa, has made all arrangements for starting a brick works on his farm east of town.

The American Cement Co. will build a large portland cement plant at Norfolk, Va., near the Norfolk navy yard.

J. B. Dickinson, secretary of the Commercial Club at Davis, I. T., can give information about a dry pressed brick plant to be built at that place.

The Francisco (Ind.) Brick & Tile Co. has been incorporated with $5,000 capital stock. Directors are J. H. Loveless, Stacy Davis and G. W. Bird.

Horace Miner, Lewistown, Ill., has decided to retire from the brick and tile business. Whether the plant will continue depends upon who buys it.

The Sunset Brick & Tile Co., Gonzales, Texas, are adding another machine to their plant and the capacity of the plant will be doubled, and is running night and day.

T. E. Flournoy, cashier of the Monroe (La.) National Bank, has found some valuable clay on his land. Tests made from them show fine samples of brick and tile.

The Simons Brick Co., Los Angeles, Cal., has just placed an order for new machinery to double the capacity of their Santa Monica plant. The factory is rushed with orders.

M. Younker has purchased the stock of F. L. Frost in the Frost Pressed Brick Co. at Des Moines, Iowa. This gives to Mr. Younkers the entire capital stock of the company.

J. D. Fowler, a representative of an Irondale brick company, visited Taylorsville, O., to investigate the quality and quantity of the clay found there with a view of erecting a plant.

The Cherokee Brick Co., Tulsa, Ind. T., have leased their plant to E. B. Howard and J. M. Pixley and they are operating it as the Tulsa Pressed Brick Co. George Comks of Chandler, Okla., is supt.

The Drury Brick & Construction Co., York, Pa., has secured 15 acres of land on Gettysburg Pike and will put up a large brick making plant. The company is composed of George W. Drury, George F. Motter and Frank E. Metz.

The capitalists who bought the plant of the National Cement Co. at Martins Creek, Pa., met in Easton and organized a new company, to be known as the Alpha Portland Cement Co., capital stock, $250,000. A. F. Gerstell of Easton, is president, J. M. Lockhart of Pittsburg, vice-president.

F. A. Moss, Washington, N. C., wants information as to brick machinery.

A brick and tile factory is being organized at Clearfield, Iowa, and the erection of the necessary buildings has been commenced.

It is understood that D. S. Miller, Owensboro, Ky., is attempting to organize a company to buy and operate the Patton Brick Works at Cloverport, Ky.

The Ohio Valley Clay Co., Steubenville, O., will start at once with two new buildings to increase the capacity of their plant and will build a large modern kiln.

The Granite Clay Co., Mogadore, O., are making arrangements to increase the capacity and output of their plant New modern machinery will be installed.

The Kittanning (Pa.) Brick & Fire Clay Co. are to spend $250,000 in increasing the capacity of their works. The present plant is turning out 80,000 brick daily.

The Spa Spring Clay Co., Camden, N. J., has been incorporated with $100,000 capital stock. Incorporators, Geo. H. B. Martin, John A. MacPeak and F. R. Hansell.

The Garfield Brick & Clay Products Co., Garfield, O., has been incorporated with $65,000 capital stock, by Anson C. Lamb, F. E. Stevenson, G. F. Ferris, P. M. Long and C. S. Bentley.

The Baltimore Vitrified Clay Co., Baltimore, Md., will erect an addition to its plant at Westport. C. W. Raymond Co., Dayton, Ohio, prepared the plans and will install the machinery.

The Montello Brick Works, Reading, Pa., has contracted with Geo. W. Beard & Co., for the erection of two corrugated iron sheds 70x360 feet at the Perkirmen plant at Oaks Station.

Tryo, Kansas, is to have a $50,000 brick plant. O. H. Buck, C. H. Pocock and D. Mahaffy are the local men that are interested. The gas will be supplied to the company at 2 cents per thousand brick.

The brick works at Iowa Falls, Ia., formerly owned by F. W. Heidenreich, is now being operated by the State National Bank of that city, and is managed by Charles Gethmann, formerly of Reinbeck.

The Northern Pressed Brick Co., Crookston, Minn., are working their plant night and day so as to take care of the trade. Electric lights have been installed and the Berg Press is running double time.

The Pittsburg (Pa.) Building, Tunnel & Furnace Brick Co. has been organized to mine clay, silica, ganister, etc., for the manufacture of brick, tile, etc. A plant will be built at once. R. B. Mackintosh is in charge.

The Tennessee Brick & Tile Co., Dyersburg, Tenn., has started on the building of their plant. The officers are J. M. Brackin, pres.; Frank Pillow, vice-pres.; C. C. Moss, sec'y and treas. and J. L. Lovin, manager.

The Zanesville (O.) Tile Co. has been incorporated with a $200,000 capital stock. J. B. Owens, G. S. Brush, C. N. Gaumer, F. G. Dodd, J. E. Blackburn and H. L. Mooar are the incorporators. They will make floor and wall tiles.

L. N. Legg, Calhoun, Ga., is in the market for pressed brick machinery.

Trott's Pressed Brick Works at Eldon, Iowa, is now about ready for operation. A Corliss engine furnishes the power and a "Boyd" Dry Press is used.

The Sibley-Minge Pressed Brick Co.'s plant at Warrior, Ala., is progressing rapidly. Many cars of material and machinery are now on the ground.

R. E. Kruger, owner of the North Texas Press Brick Co. at Denison, Texas, expects to increase the capacity of his plant by the putting in of more machinery.

The Kasten & Schmucke Pressed Brick Co., Jackson, Mo., has been incorporated with $10,000 capital stock by Rudolph C. Kasten, Arthur J. Kasten and Jos. E. Schmucke.

The Ferris Paving Brick Co., Mechanicsville, N. Y., has its building brick plant installed and started making 45,000 brick daily. Another machine will be added in the spring.

The American Clay Mchy. Co., Bucyrus, Ohio, have advertisements in this issue on pages 13-22-47-51-52-54-55 and 58. Nearly every thing in the line of clayworking machinery.

The Sarpy City Hydraulic Pressed Brick Co., Omaha, Neb., have begun the grading at Sarpy Mills for their large brick plant. Machinery has been bought for 100,000 brick per day.

The Blackmer & Post Pipe Co., St. Louis, Mo., has bought a tract of clay land at Texarkana, Texas, and has submitted a proposition to the citizens of that city to build a large sewer pipe plant.

The Sheffield (Ala.) Brick & Tile Co. has been incorporated with $10,000 capital stock. The officers are Col. R. H. Wilhoyte, pres.; R. J. Thurmond, Jr., secretary and treasurer, and E. Evans, supt.

A new brick works will be started at Reading, Pa., with Cyrus Q. Guldin and A. J. Brumback at the head. William Robinson who has been making brick there for 35 years, will be the manager of the plant.

The Collingwood Brick Co., Toledo, Ohio, whose present plant is located at Blanchard and Oakland Sts., is looking for a new site and when one is found they will build a modern plant with dryers, etc.

The Minona Portland Cement Co. will open their subcription books at Selma, Ala., at once, and will build a large cement plant at Epps Station where a large deposit of cement making material has been found.

On page 23 of this issue is the ad. of the Abbe Engineering Co., 12th floor, 222 Broadway, New York. It contains the photo of the 500th machine or mill made and sent out by this firm. This one was shipped to a large pottery company.

At the annual meeting of the Beaumont (Texas) Brick Co., Sam Park resigned as president and was succeeded by Newton R. Wilson of Monterey, Mexico. A. R. Batley becomes the general manager. Wm. F. Scott of St. Louis, is a director.

The Linn Grove (Ia.) Brick & Tile Co., have closed for the season after the most prosperous one in history of the company. Plans are being made to build a two story drying shed so that the plant can be kept running much longer each season.

The Neshannock Brick Co. has been organized by J. W. Neff, W. S. Rice, W. S. Mears, J. B. Thompson, Wm. J. Hartzel of New Castle, Pa., to operate the Volant (Pa.) Clay Mfg. Co.'s plant which was recently sold to satisfy creditors. The capital stock is $50,000.

Clay and Clay Property for Sale

550 Acres of Land in Cherokee County, Kansas, with ovens for making coke, natural gas for burning brick, etc Mo. Pac. and Mo. K. & T. railroads' tracks on the property.

For full particulars address

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17 Battery Place, NEW YORK CITY

WANTED

A man to take charge and manage a brick and tile plant. He must thoroughly understand machinery, setting brick and drain tile and burning same. The plant is engaged in manufacturing stiff mud brick, dry pressed brick and drain tile. A permanent position to the right man. State age, experience, salary expected and full particulars. Prompt action required. Address.

FACTORY,
Care, Clay Record.

BRICK YARD FOR SALE.

Brick Yard for sale cheap. A bargain to the right party. Good market at hand. For further information address

BRICKMAKER,
Care Clay Record, Chicago, Ill.

FOR SALE CHEAP.

Freese Combination Brick Machine, 30,000 brick capacity, side-cut board delivery table, 60 horse-power Tubular Boiler, 50 horse-power Engine; 11,000 three-slat 10x36 pine Pllets, Trucks and Barrows. All in good condition. Will sell separate or whole. Address JOHN POELLEIN,

1600½ 18th St., Louisville, Ky.

FOR SALE.

Profitable running brick plant, 25,000 capacity. Ready sale for entire product. Owner has larger interests requiring attention

TERRA HAUTE PRESSED BRICK CO.
Terra Haute, Ind.

WANTED.

Position as superintendent or manager paving brick plant. Have had years of successful experience as manager of brick plants. Have built and successfully operated plants in all parts of the United States. Location of present position not desirable. Can arrange to leave at any time A1 reference. Plant needing an active up to-date hustler where results count desired. Address

BUSINESS, care Clay Record.

WANTED.

Wanted—A Four-Mold Dry Press, in good condition. Price must be reasonable. Address

T, care Clay Record,
Chicago, Ill.

FOR SALE.

For sale, reasonable, in condition—

One 5x18 foot Horizontal Tubular Boiler.
One No. 20A Penfield Hollow Brick Machine.
One 14 foot Pug Mill.
One Disintegrator,
One 40 foot Clay Conveyor, with 20 foot belt.
Forty Fire-proofing Dies, with two extensions, pullys, clutches and belting.

Reasons for sale, are making different ware.

R. 611, W. 51st St.,
New York City.

FOR SALE.

Drain Tile and Brick Plant for sale. Good machinery. Good location. Plenty of clay. Price $2300, small payment down, long time on rest. Will take product as pay. Address

CONTINENTAL,
Care Clay Record, Chicago.

FOR SALE.

A 20,000 capacity brick and tile plant, located in good Michigan town. Has Stewart patent kilns, plenty of drying sheds, all machinery in good condition, fine clay, good market, established business. Price very reasonable. Address

MICHIGAN,
Care Clay Record, Chicago, Ill.

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FOR SALE

Two Wiles Soft Mud Steam Power Brick Machines. Two Tempering Wheels for horses. 40 h p. Boiler. 30 h p. Engine. 5 or 6 Trucks. All necessary Belt and Shafting. Also about 500 feet light Steel Rails with Switches. Everything in good working order. Will sell cheap as we have started an in-door yard.

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One Komnick 1000 to 1200 per hour sand-lime Brick Press in good condition. Was replaced with larger capacity press, same make. Inquire of the

SAGINAW SANDSTONE BRICK CO.
Saginaw, Mich.

FOR SALE CHEAP

One Freese Automatic Cutting Table, latest improved. In perfect condition. Address,

CHARLOTTE BRICK CO.
Charlotte, N.C.

FOR SALE.

50 rack cars for 32 inch pallets, capacity 432 brick; track gauge 24 inches.
Also 55 flat cars for soft mud brick, with foot pallets Track gauge 25 inches.
Both styles of cars in first-class repair.

ATLAS CAR & MFG. CO.
Cleveland, Ohio

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A second hand No. 2 Giant Auger Brick Machine. Address "GIANT,"

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FOR SALE.

Right and left-hand One, Two and Three Way Switches, of various gauges, radius and weight rail, at special prices.

THE ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

FOR SALE—CHEAP—1200 Steel Crimped Pallets. 10x34 inches. Address

ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

FOR SALE—CHEAP—New and re-laying rails, 12, 16, 20 and 25 pound. For prices, address

ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

FOR SALE.

One 4-Mold Dry Press, very cheap. Good as new.

DEALER,
Care Clay Record, Chicago, Ill.

FOR SALE.

100 Single Deck Cars.
3 Transfer Cars.
1 Centrifugal Pump.

O. W. DUNLAP,
Bloomington, Ill.

WANTED.

A brick and tile plant in exchange for a good Iowa or Illinois farm. Address

FARM,
Care Clay Record, Chicago, Ill.

FOR SALE.

Only wire cut shale brick plant in Sharon, Pa. Capacity 25,000 brick daily. Reason for selling, owner busy engaged elsewhere. Town 30,000 inhabitants. Uses more brick than can be made. Address

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A good reliable man of experience with small capital to invest, to take charge of a new modern Steam Brick Plant, organized for brick and tile. Plenty of good clay and good prices for brick. Address, WISCONSIN,

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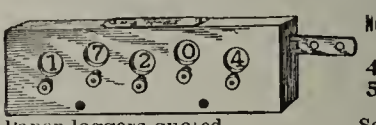

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One 12-foot Pug Mill. One American Clay Machinery Co.'s Brick Machine. Raymond Repress. Iron Brick Cars. Pallets Etc.

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Two 4-mold style "F" American Clay Machinery Co. Dry Presses, in good order. Have made about one million brick. Reason for selling is that clay is not suitable for dry press brick. A bargain for some one.

VERSAILLES FIRE-BRICK & CLAY MFG CO.
Versailles, Mo.

WANTED.

WANTED—One second-hand 100 H. P. Engine and one 150 H. P. Boiler

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FOR SALE CHEAP.

One Schwartz Mixer, in good condition, has been used one year. Can made immediate delivery.

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New and rebuilt Slide Valve and Automatic Engines from 3 to 200 h p. Boilers of all types, from 5 to 150 h. p. All of our rebuilt machinery is thoroughly overhauled in our own shops by competent mechanics and modern tools. We are now offering some special bargains. Send us specifications to your requirements.

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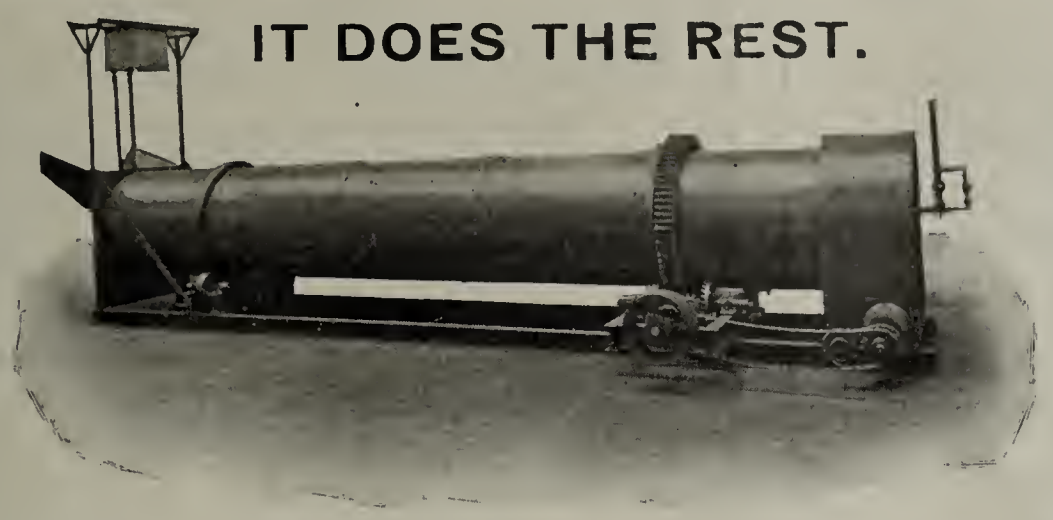

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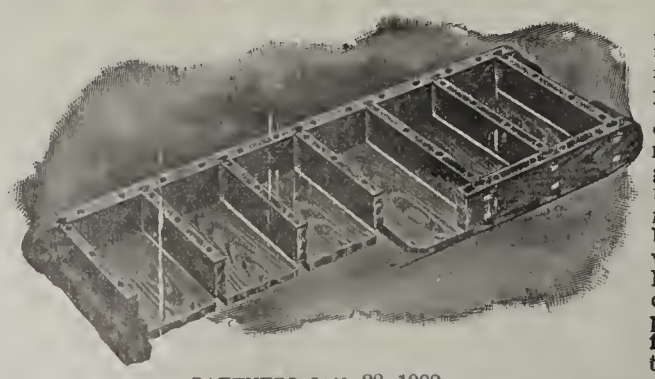

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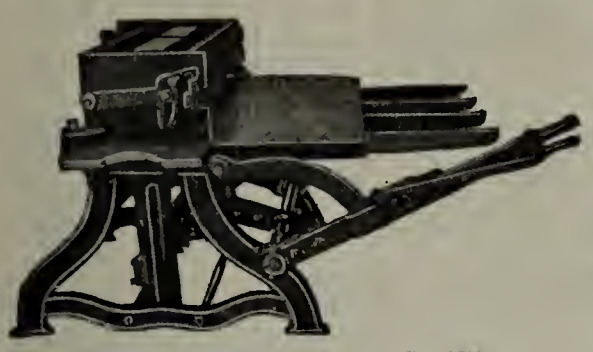

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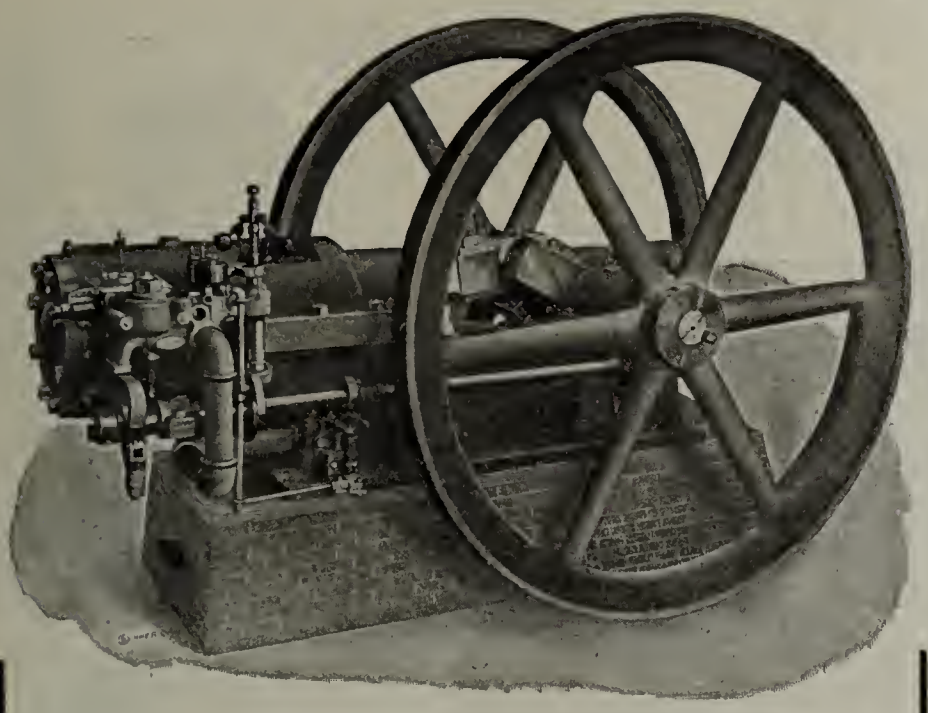

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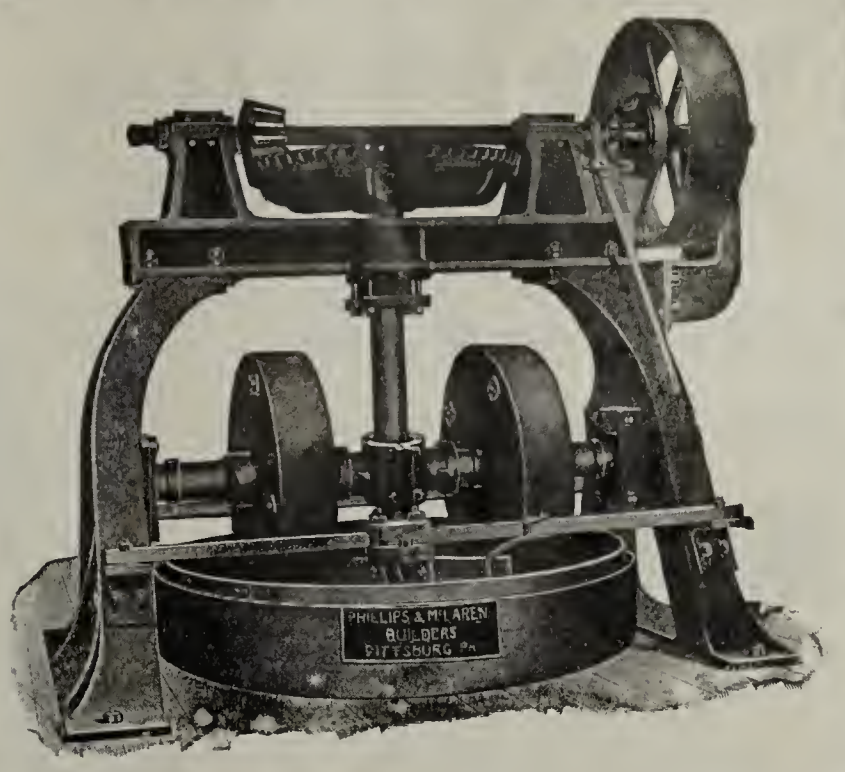

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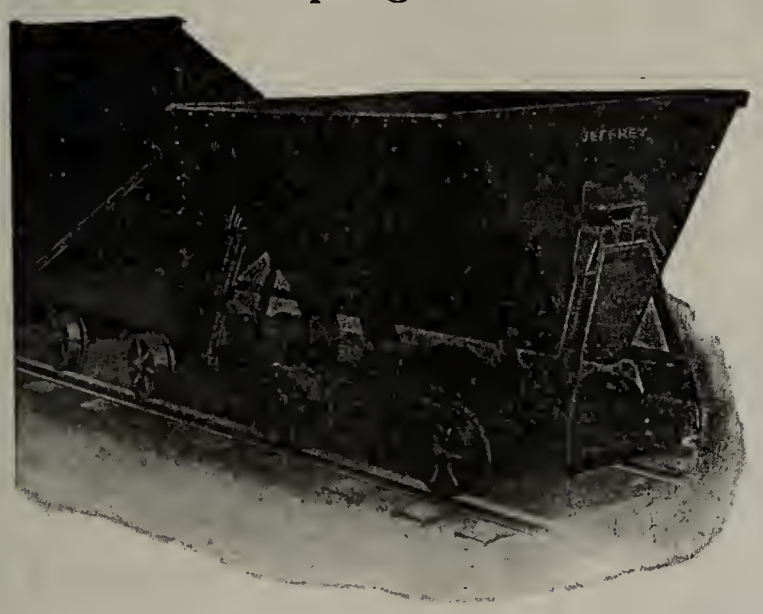

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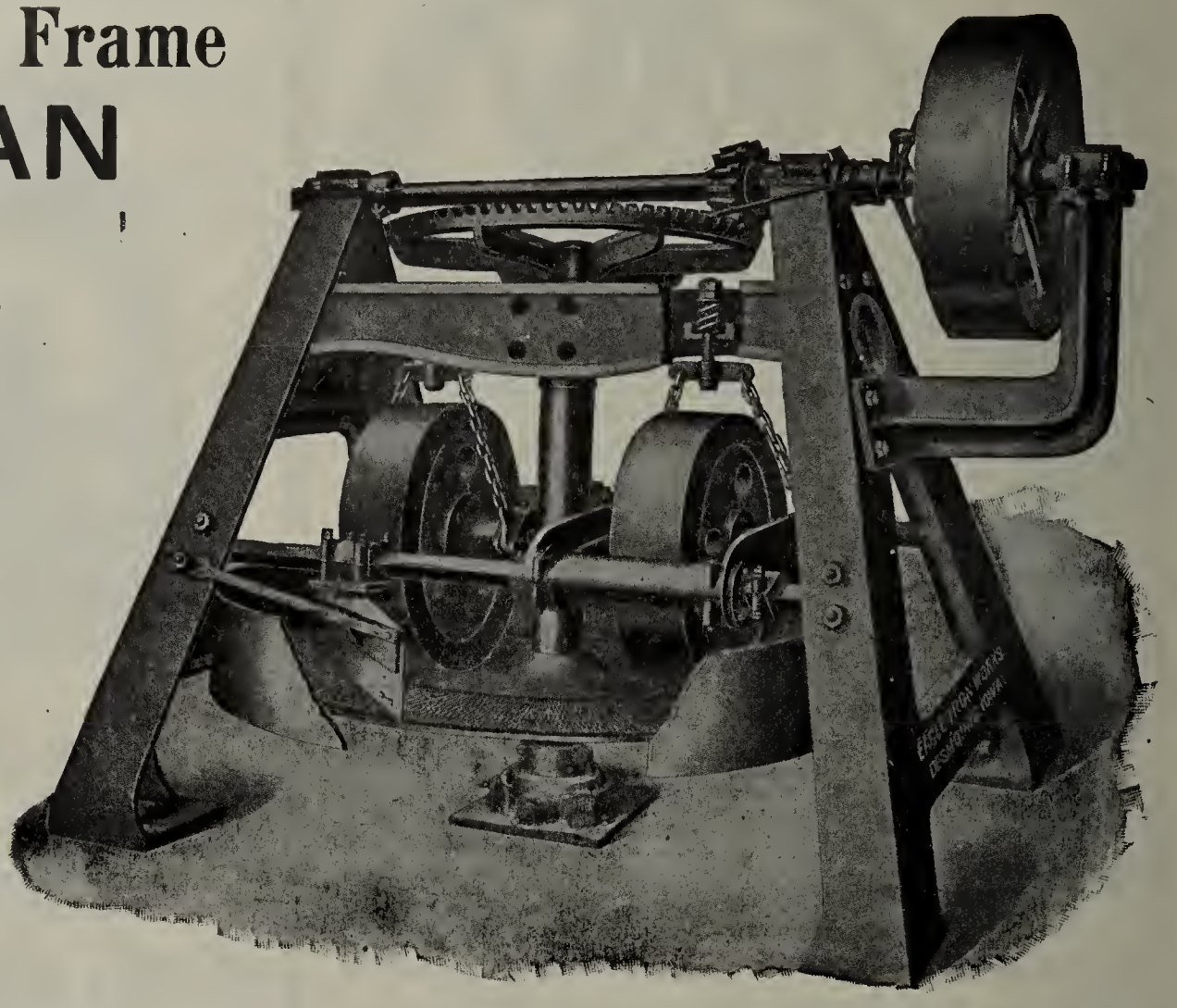

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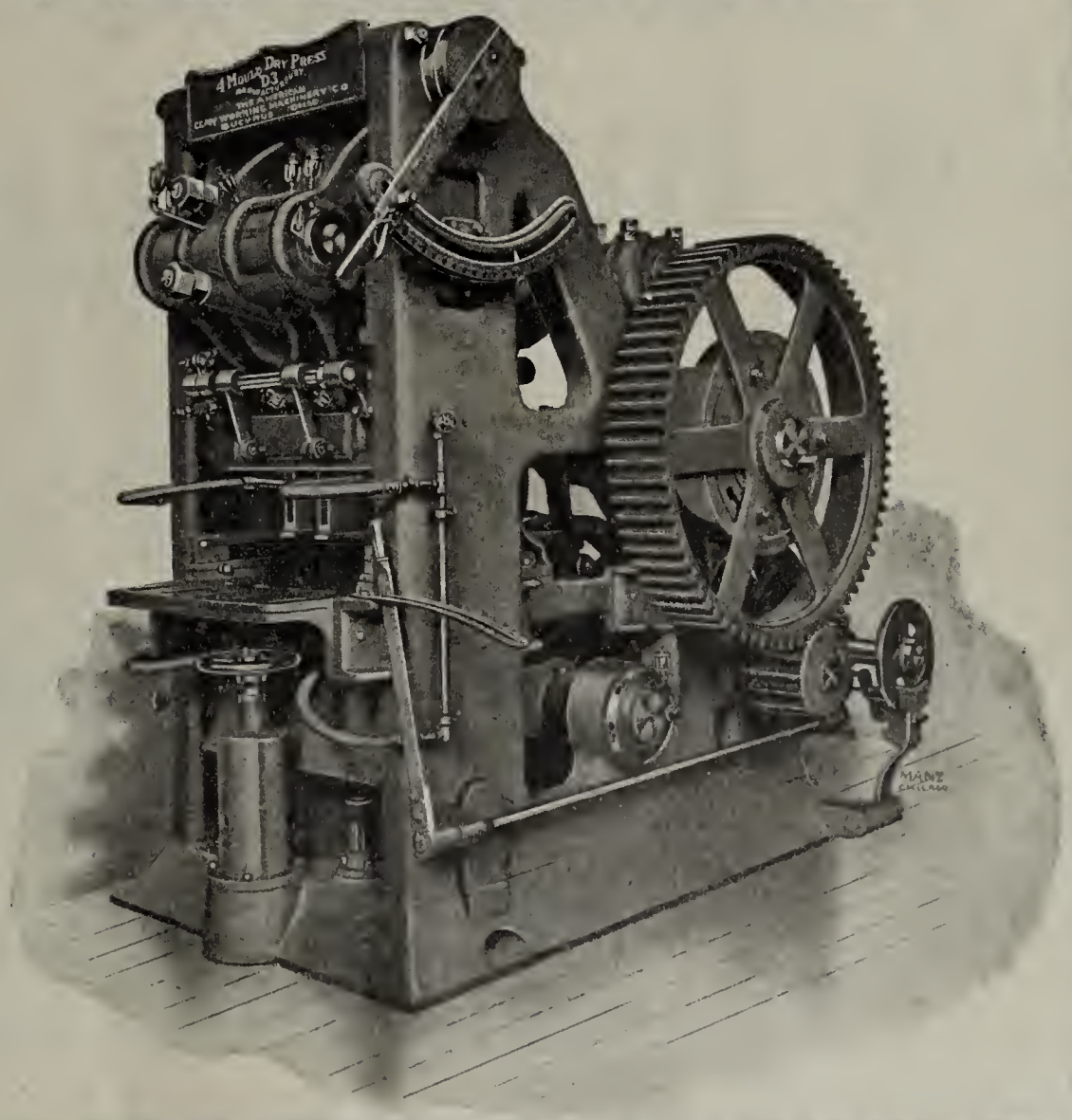

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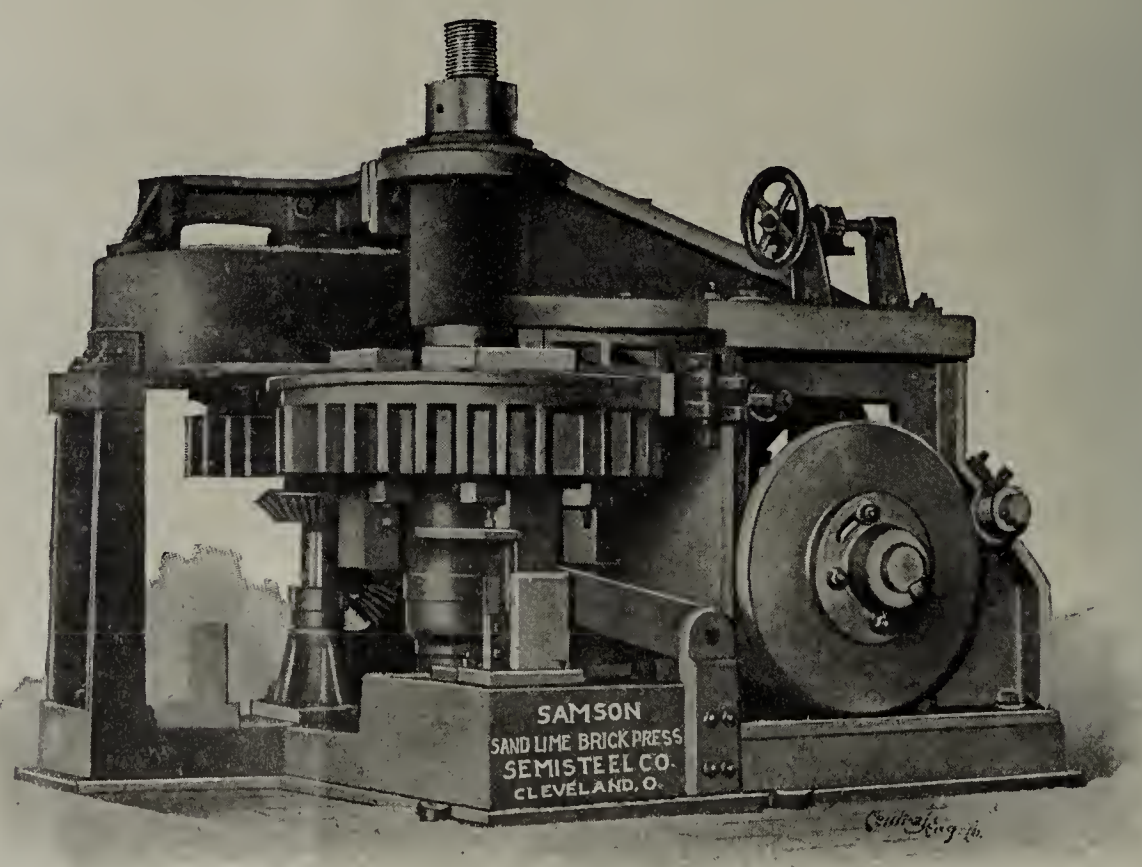
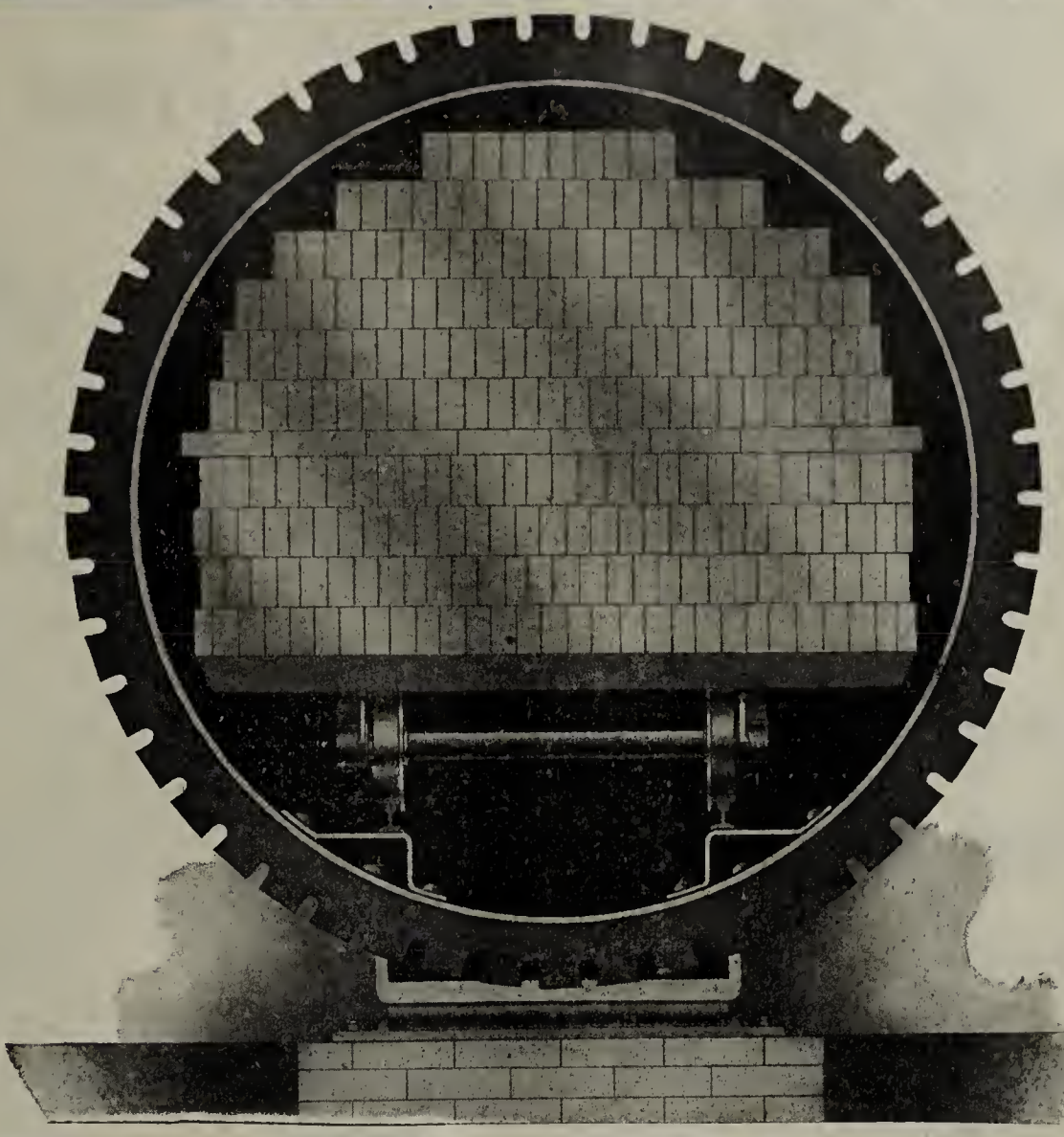


SAND-LIME BRICK MACHINERY



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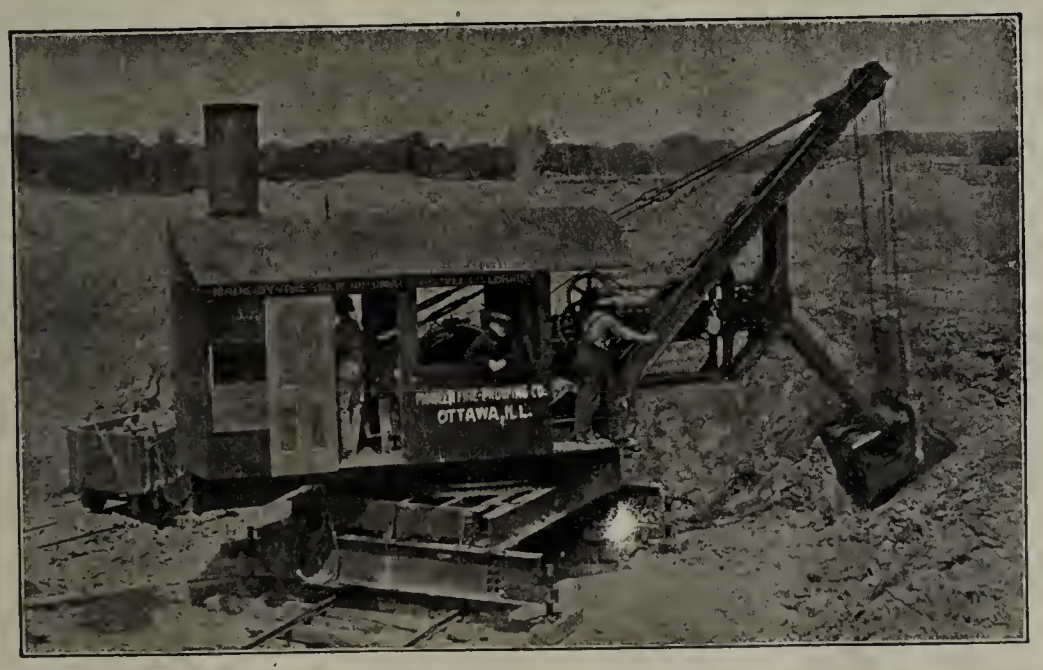

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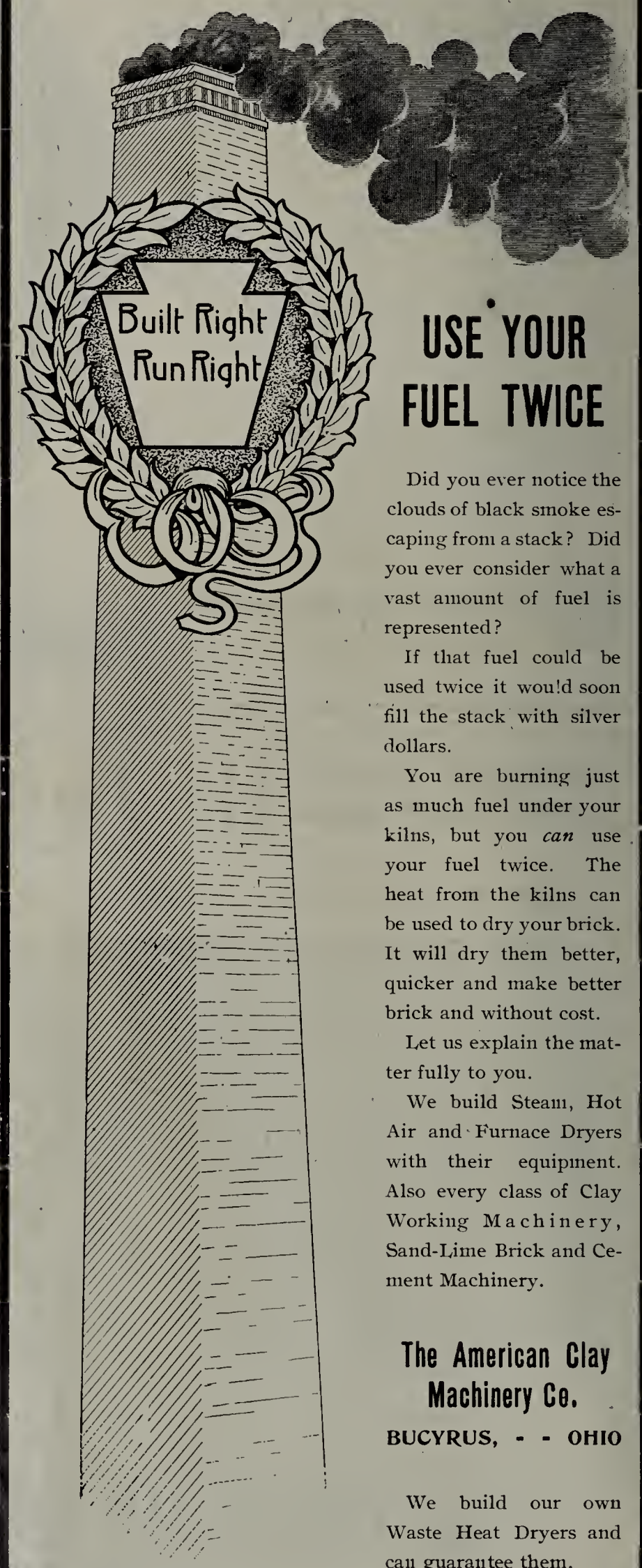

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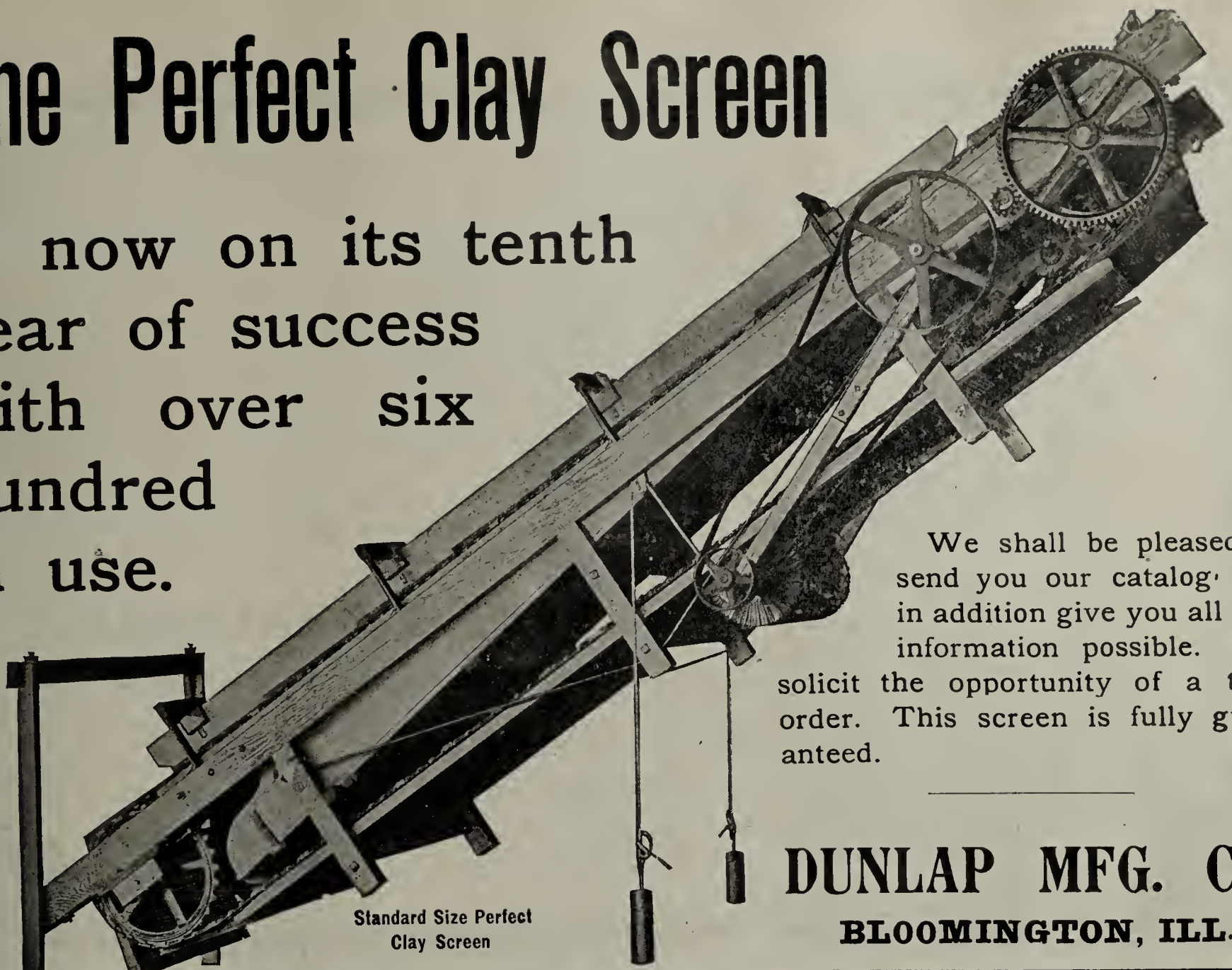

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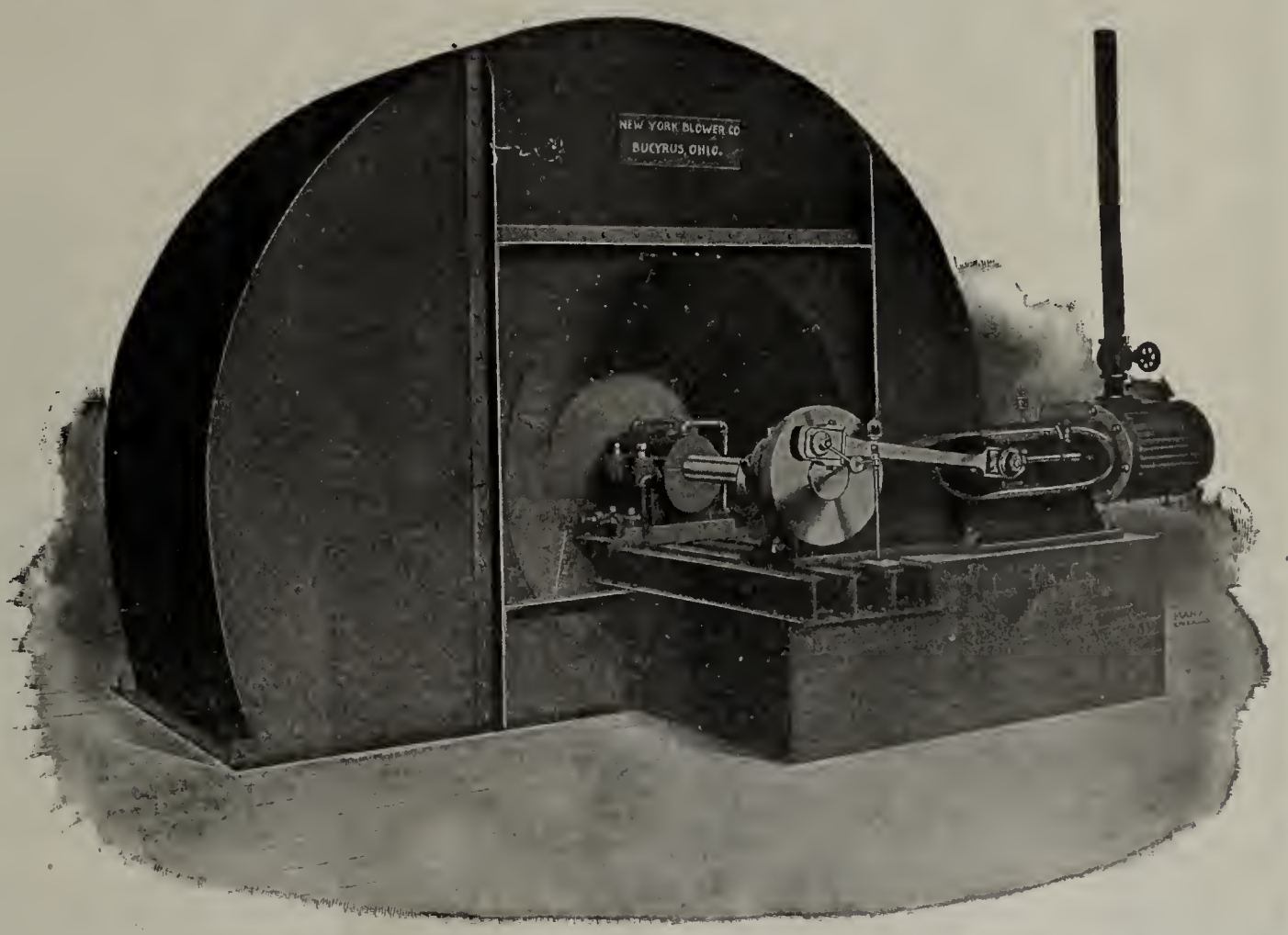

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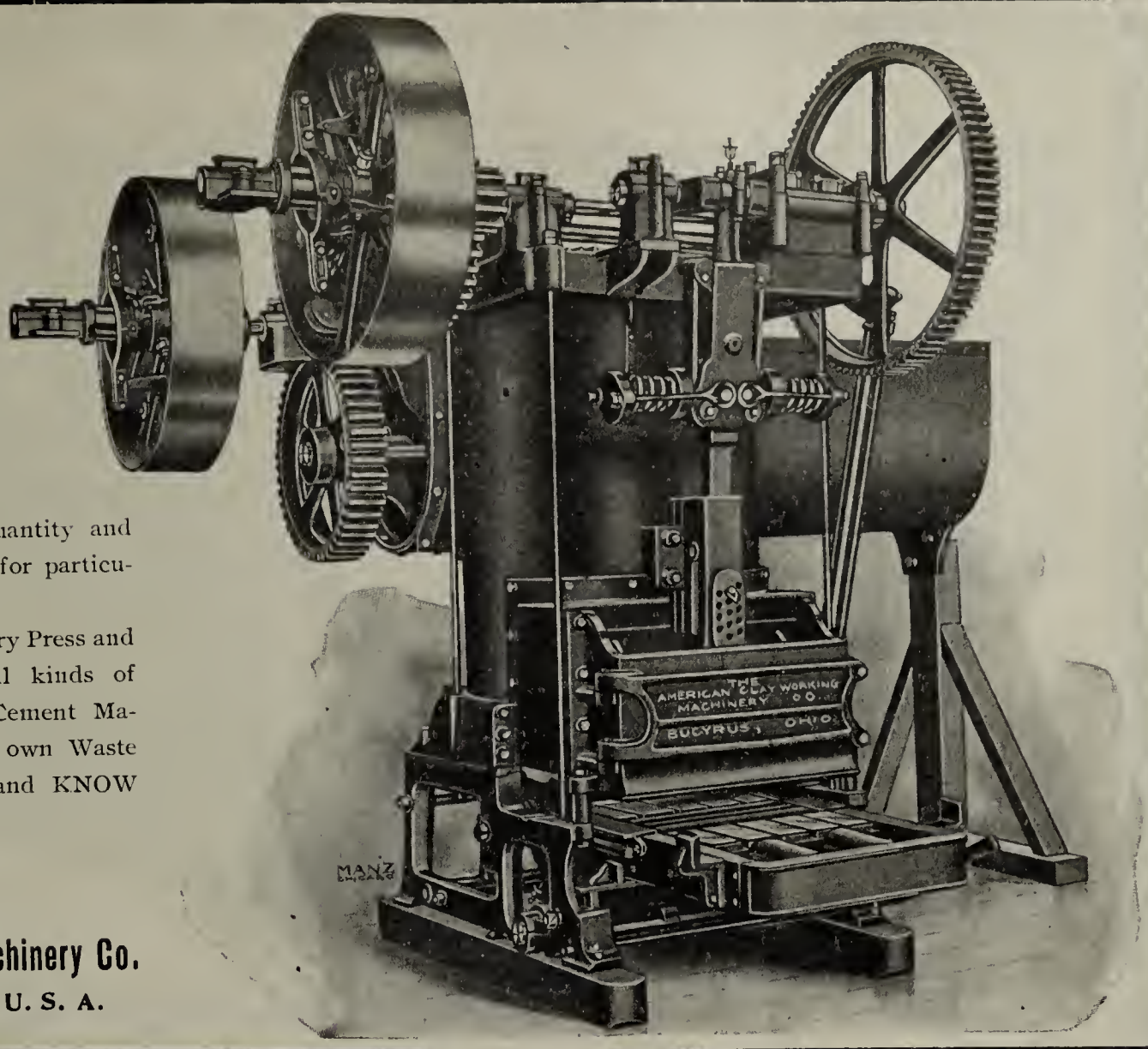

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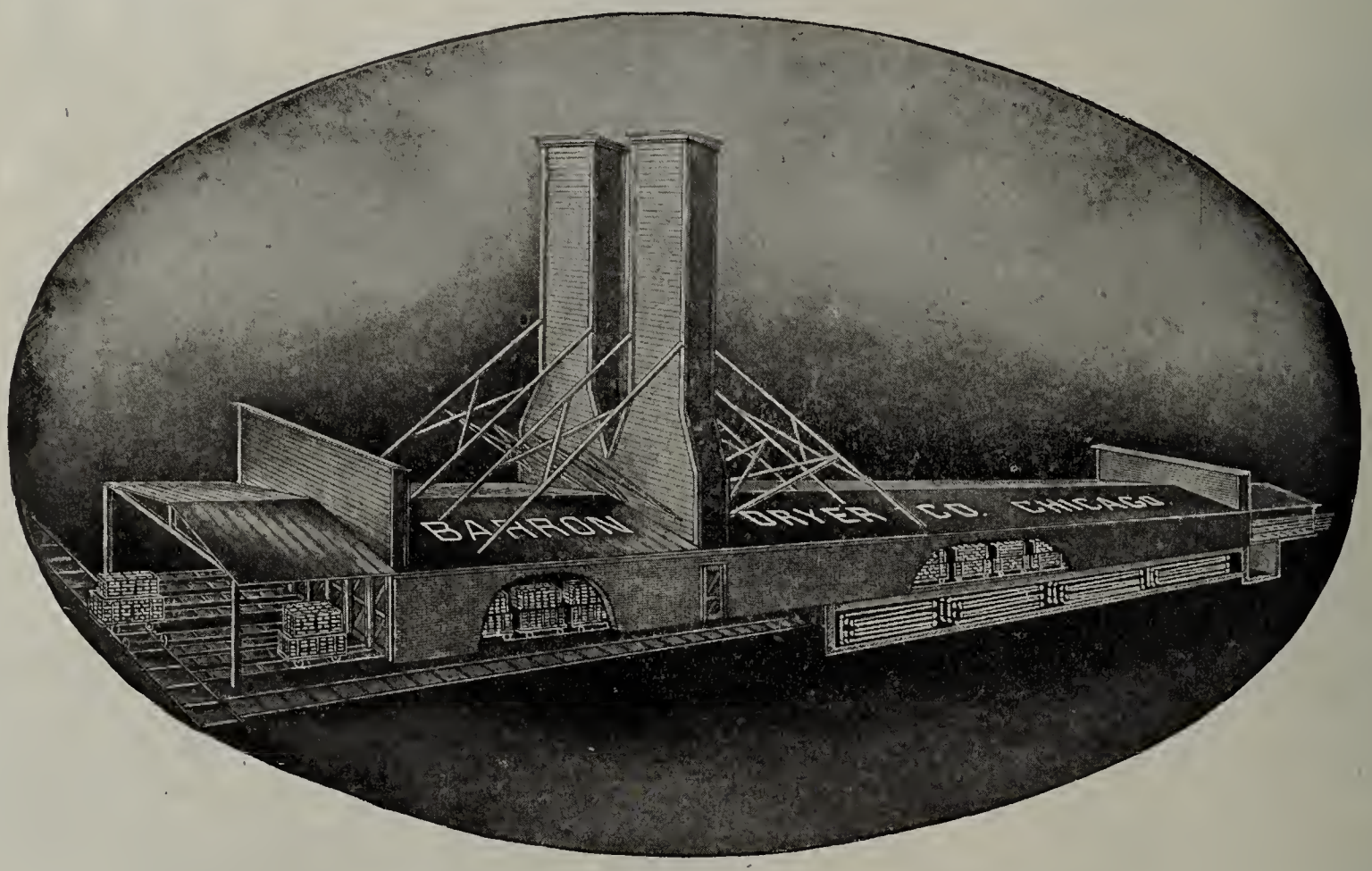

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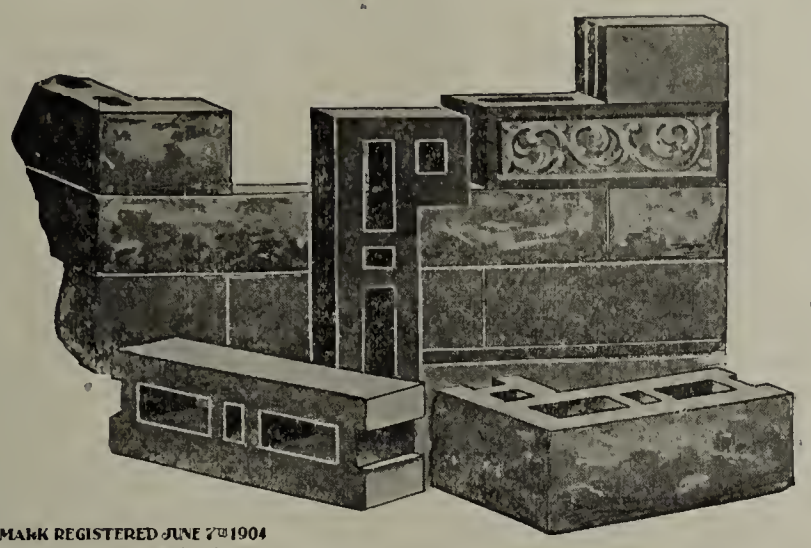

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It makes all angles for **bay-windows.**

It makes blocks of different contour by removable face plates with patented designs.

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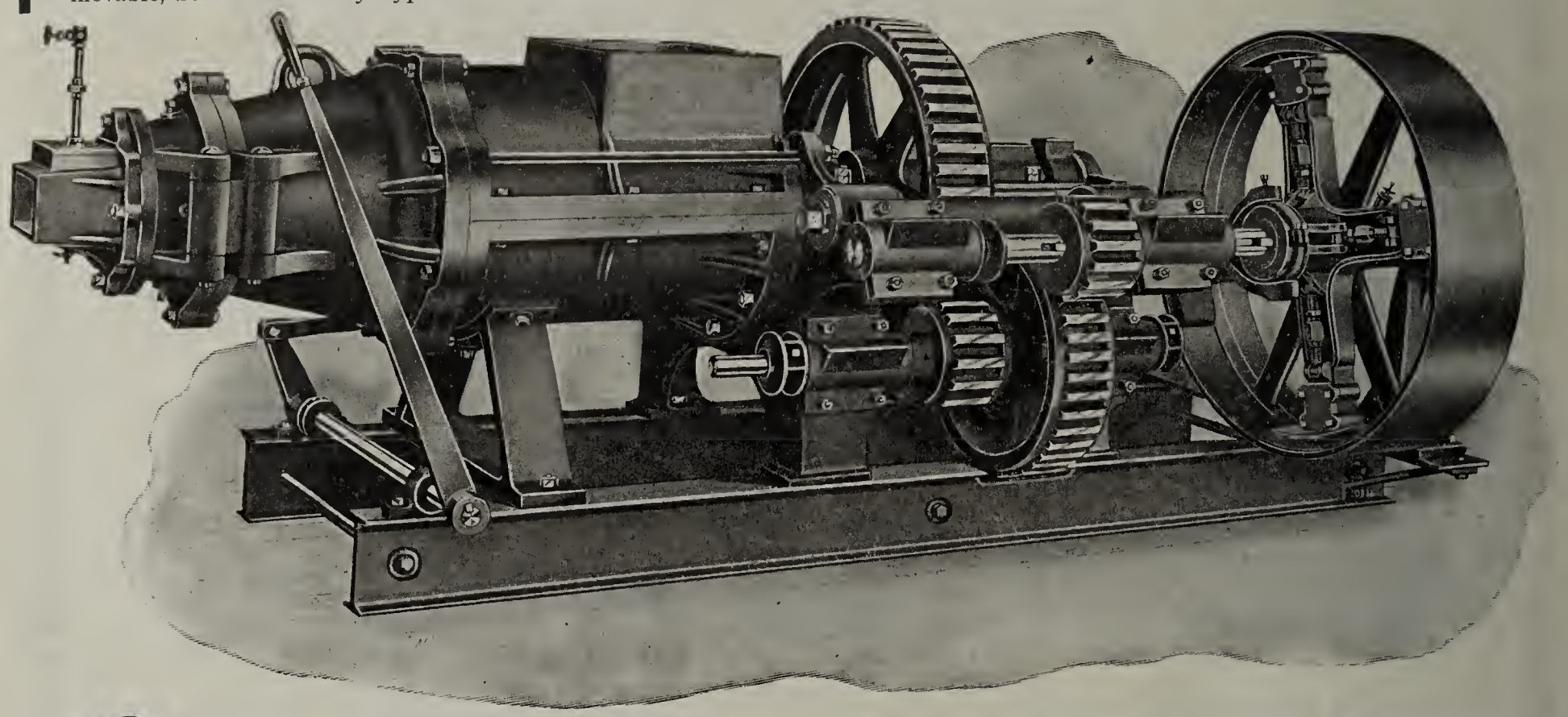

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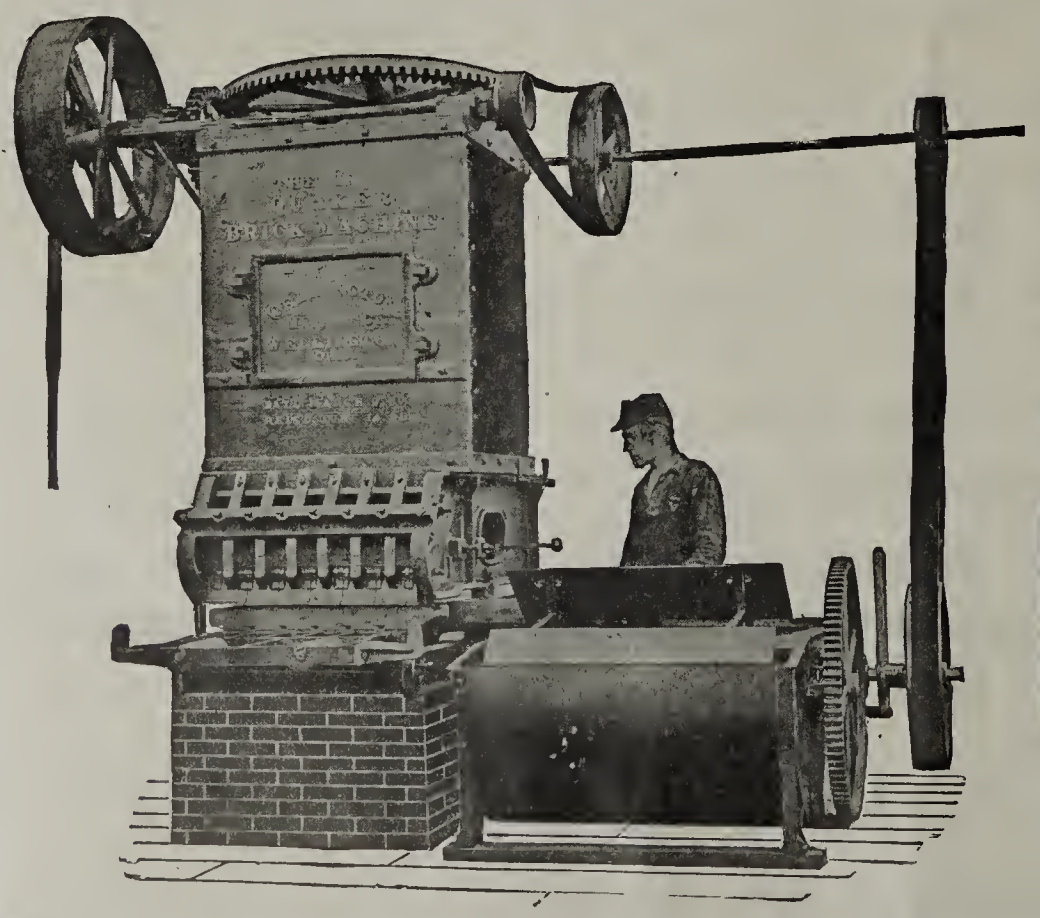

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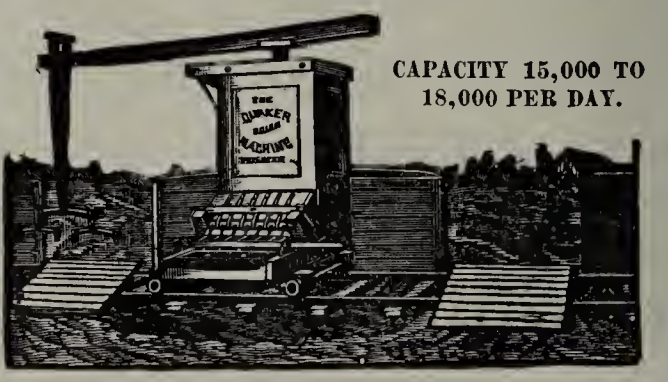

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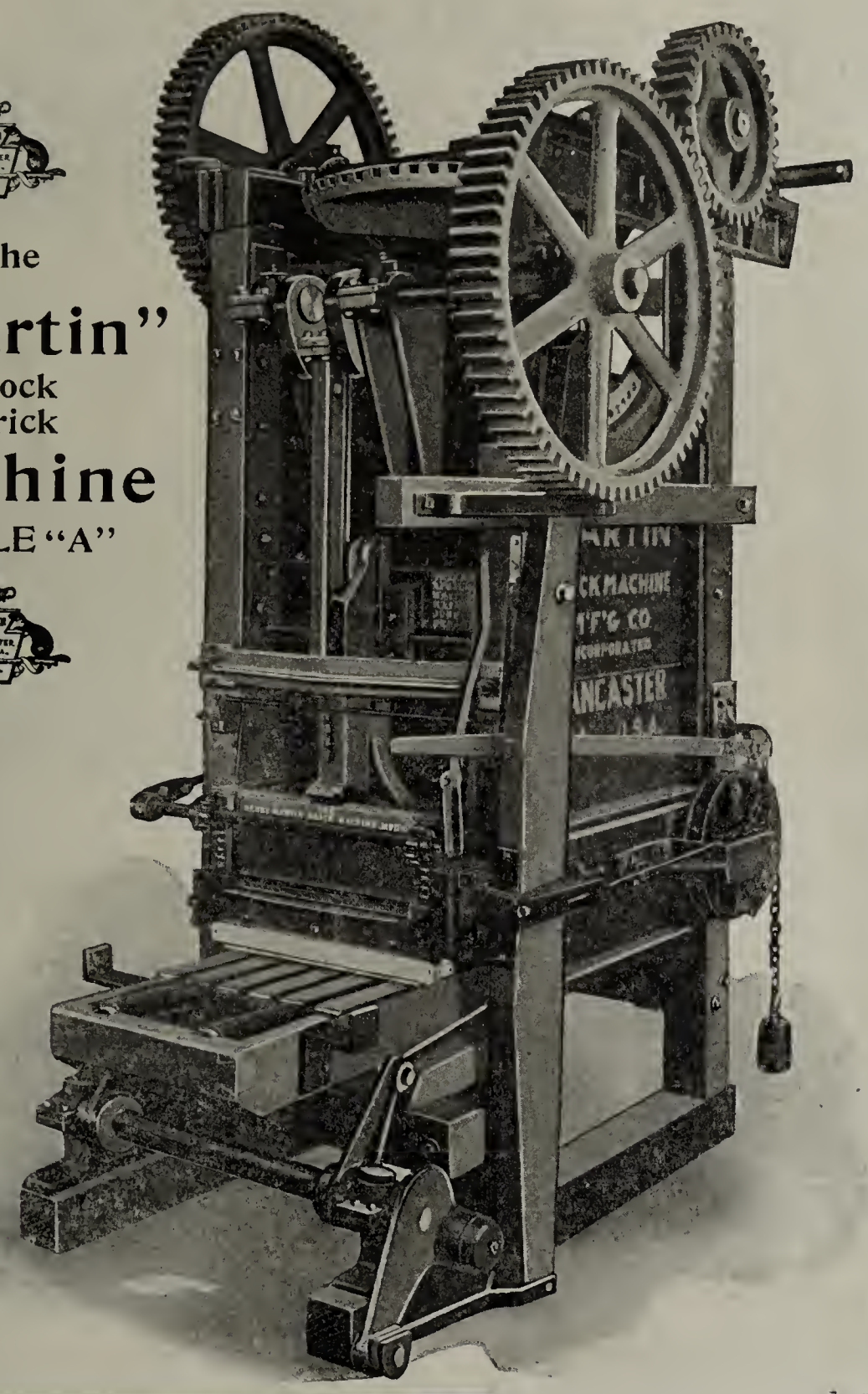

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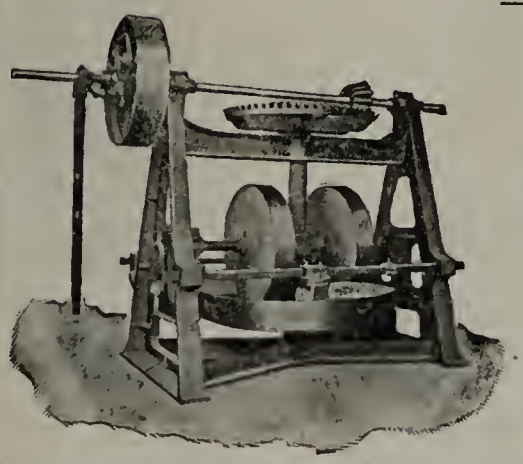

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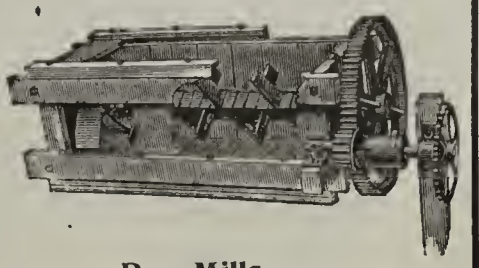

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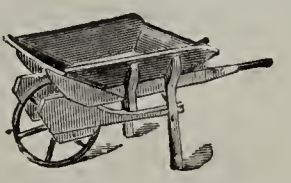

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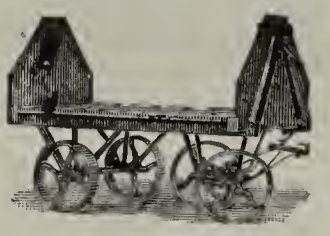

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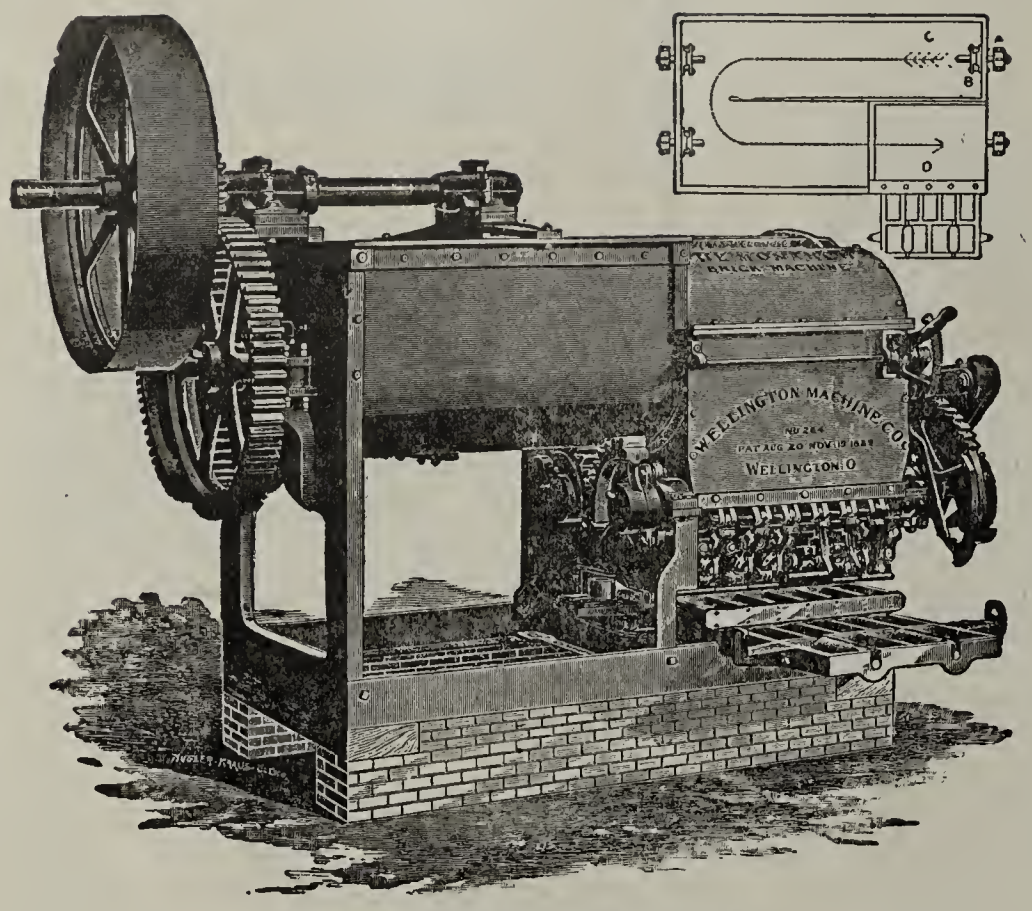

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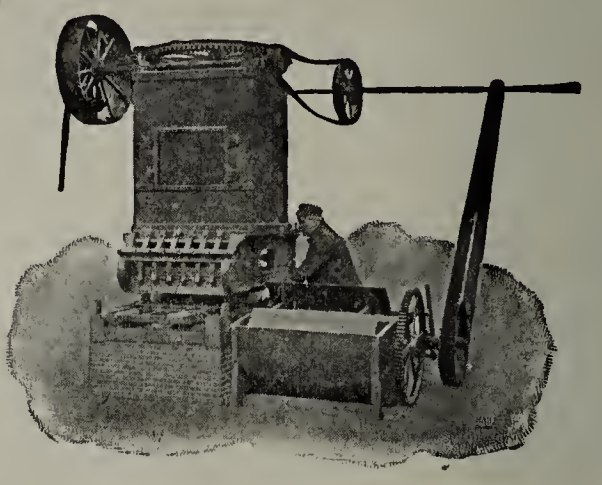

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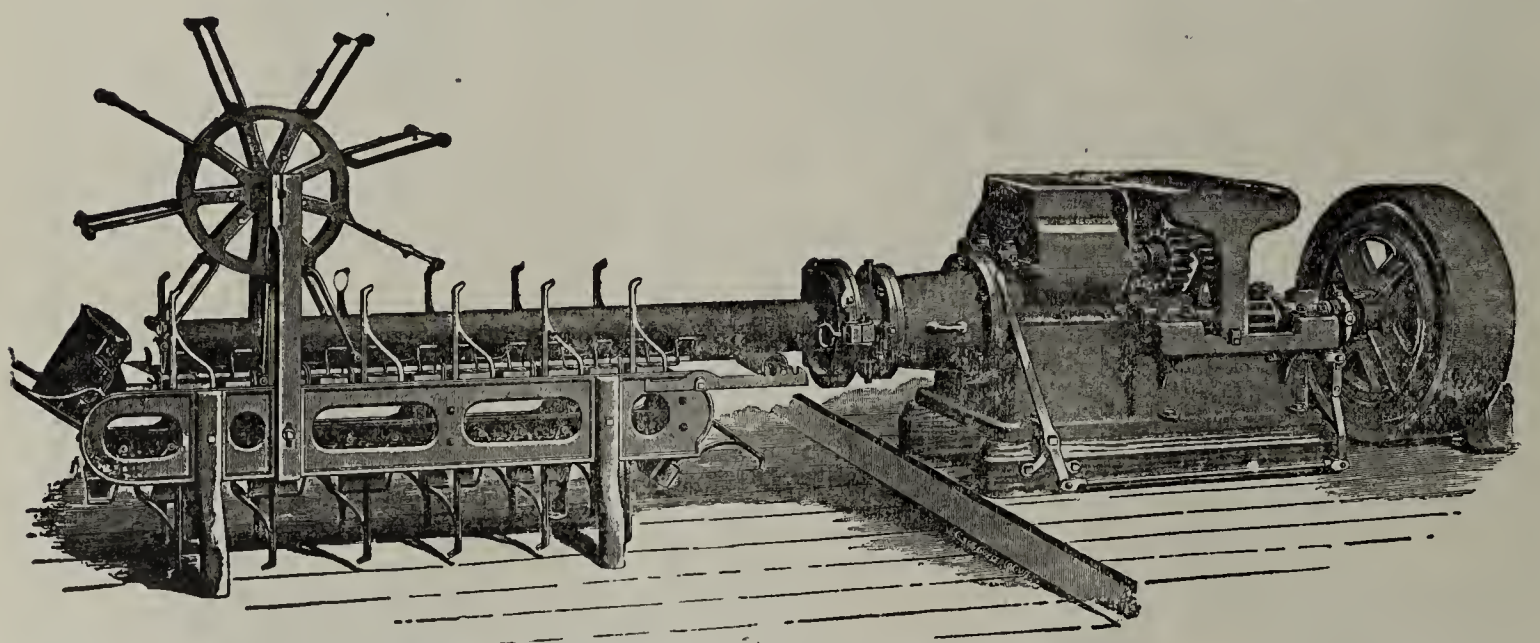

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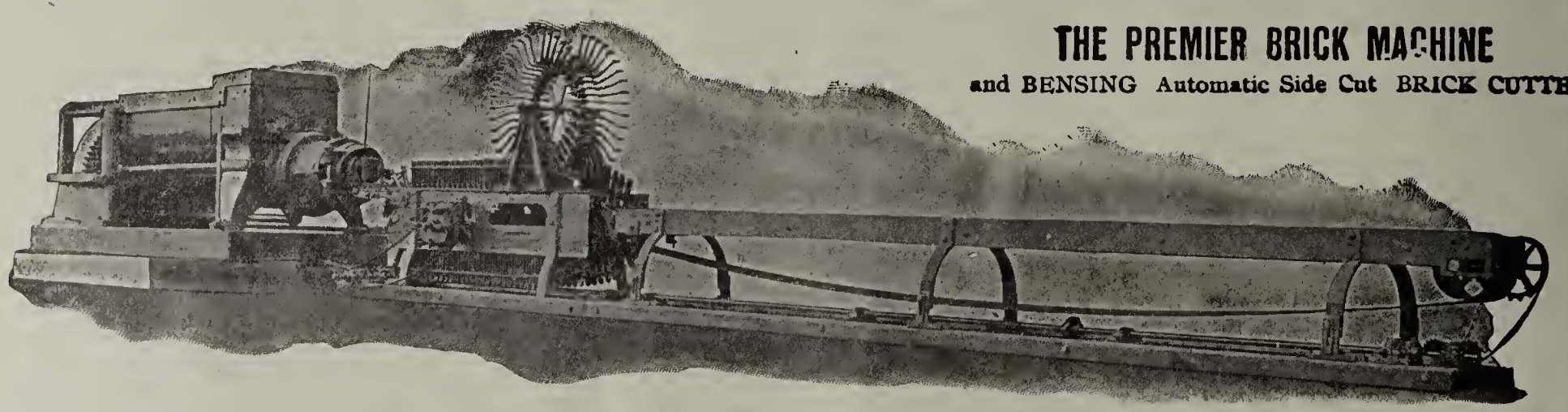

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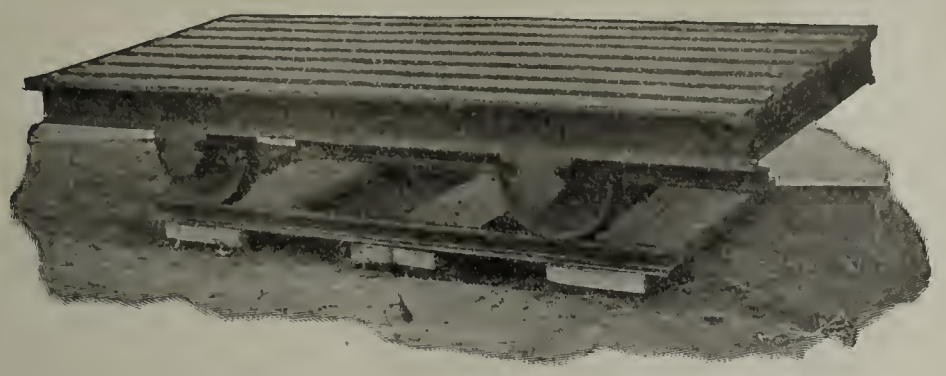

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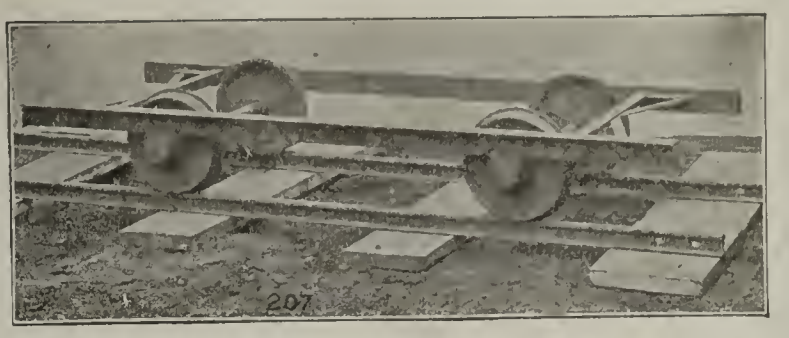

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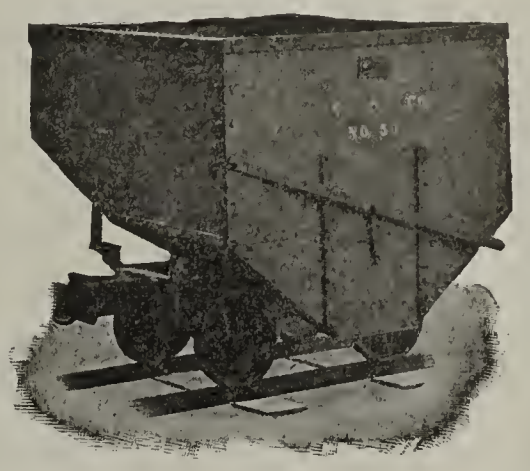

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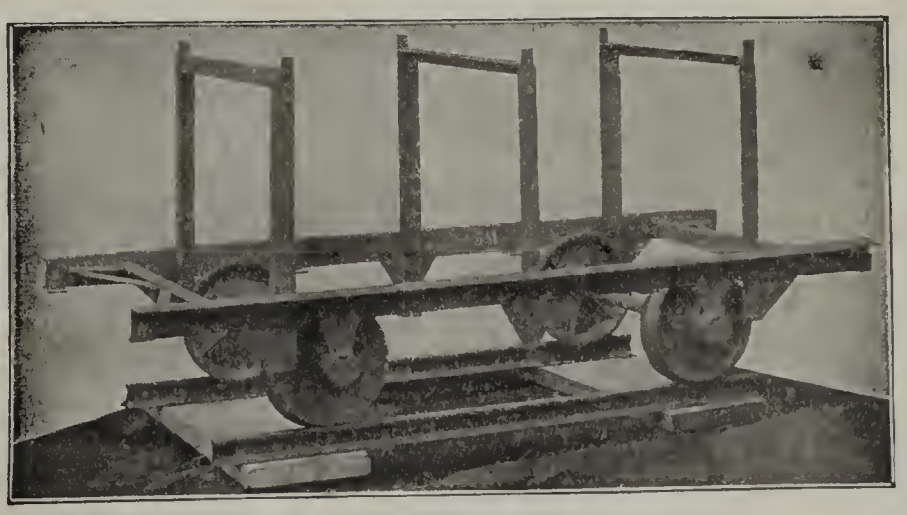

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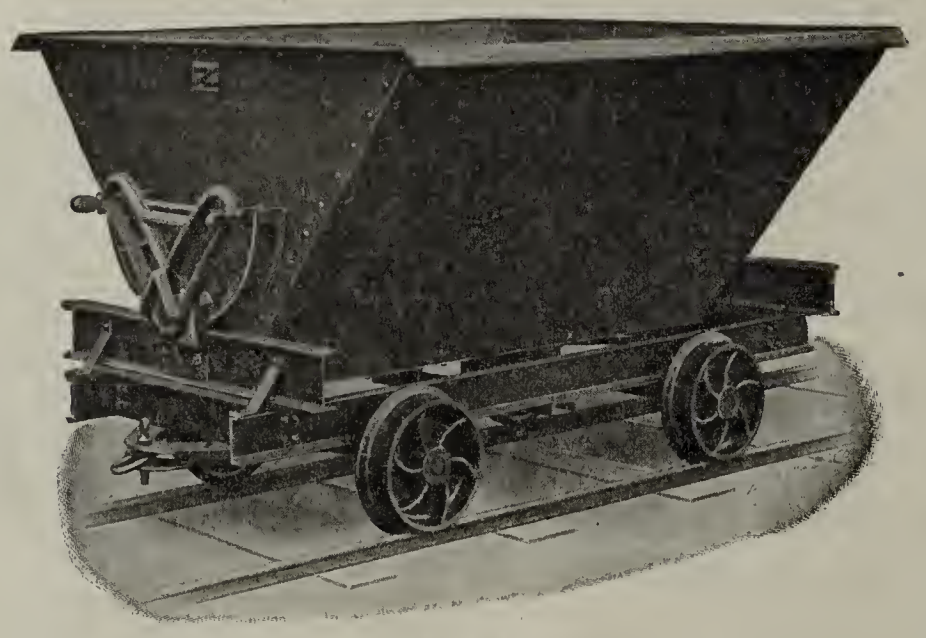

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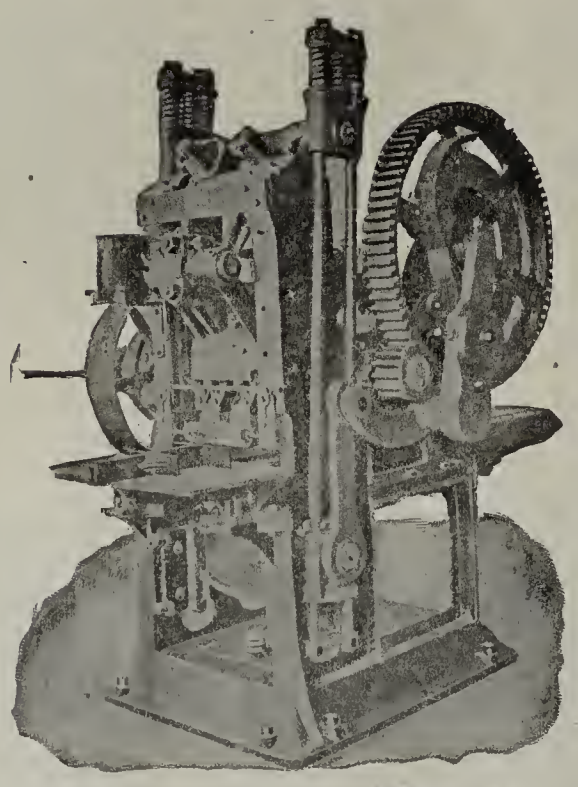

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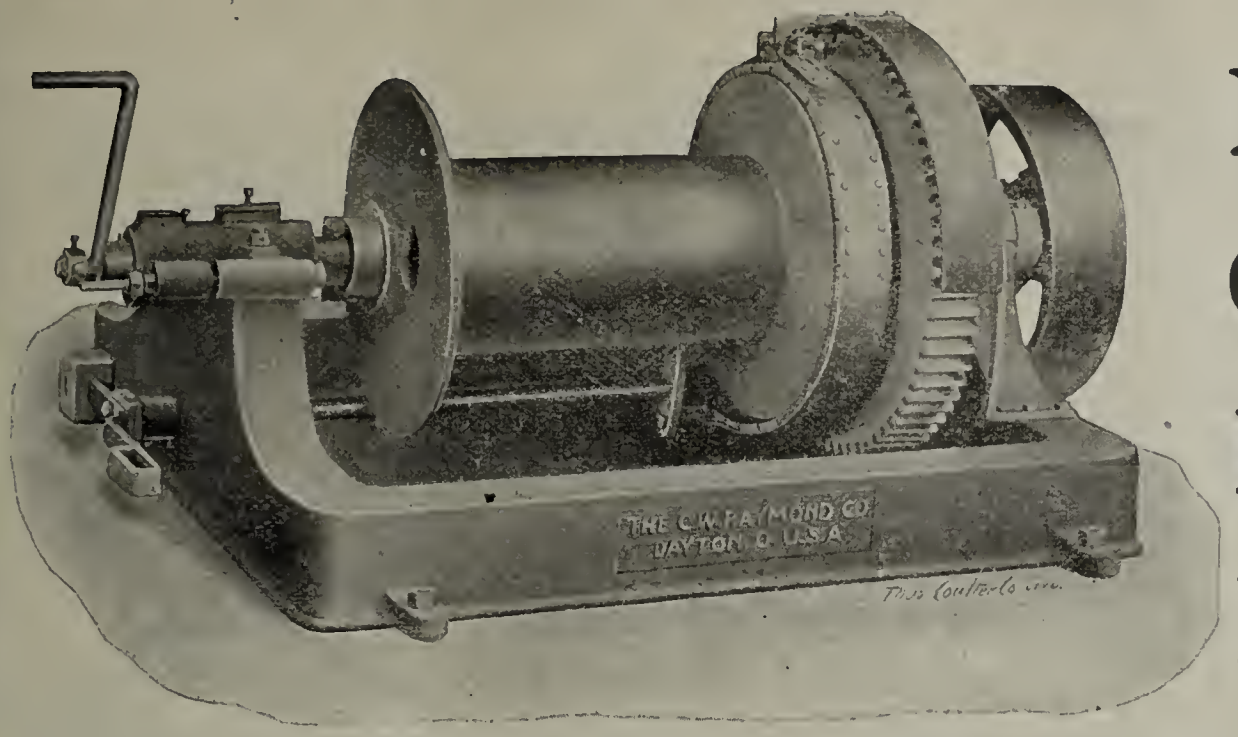

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Can also be furnished bevel geared or direct connected with a

Ten Horse-Power Verticle Engine

Installation inexpensive. Cost of operation less than by any other method. Both Labor and Time Saved. No repairs to pay for. Our Engineers can design a hoist and car system of haulage to meet your individual requirements.

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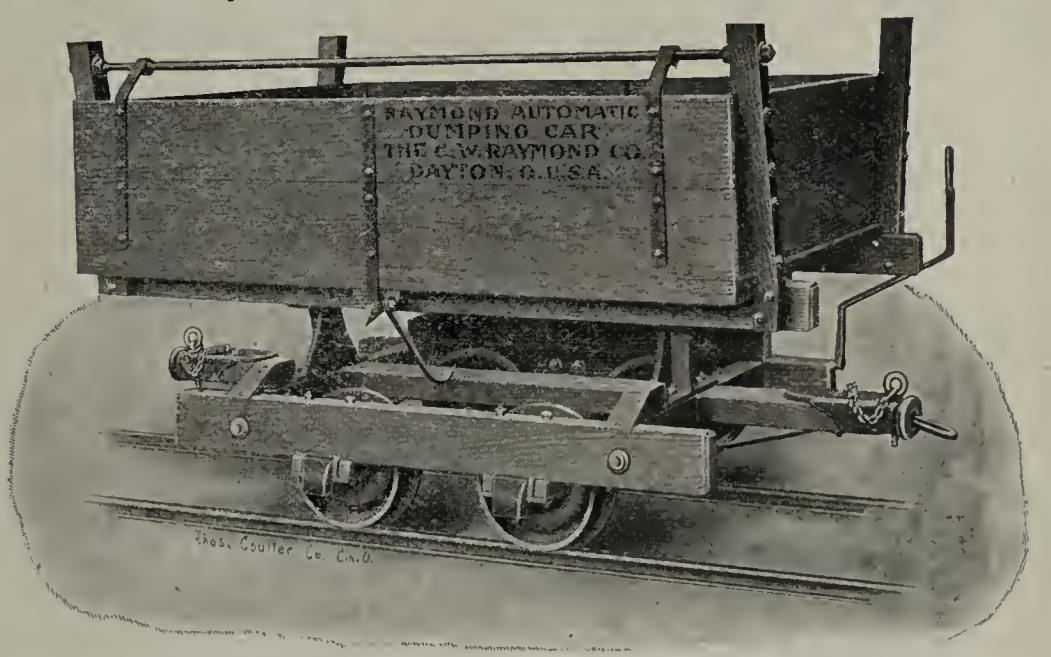

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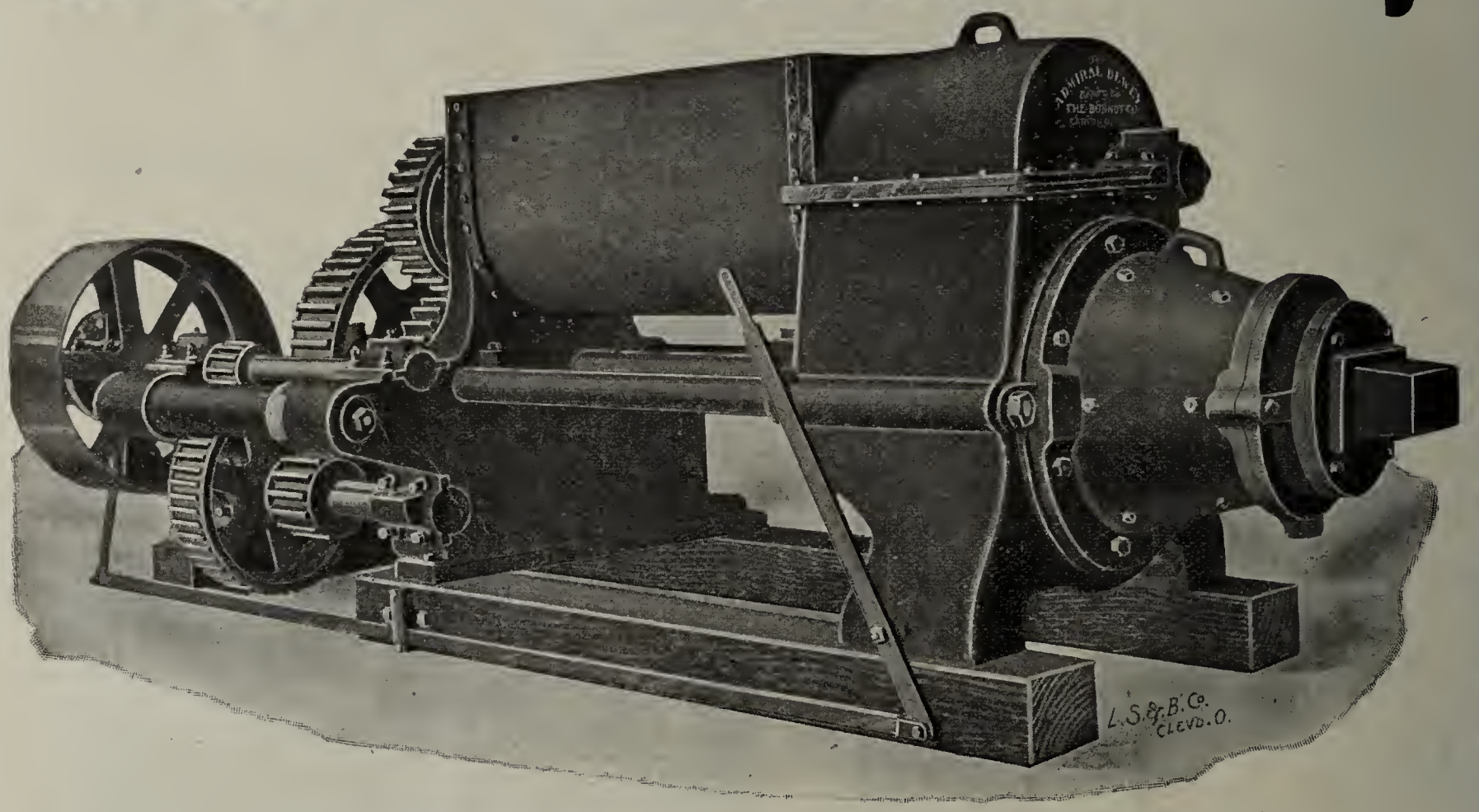

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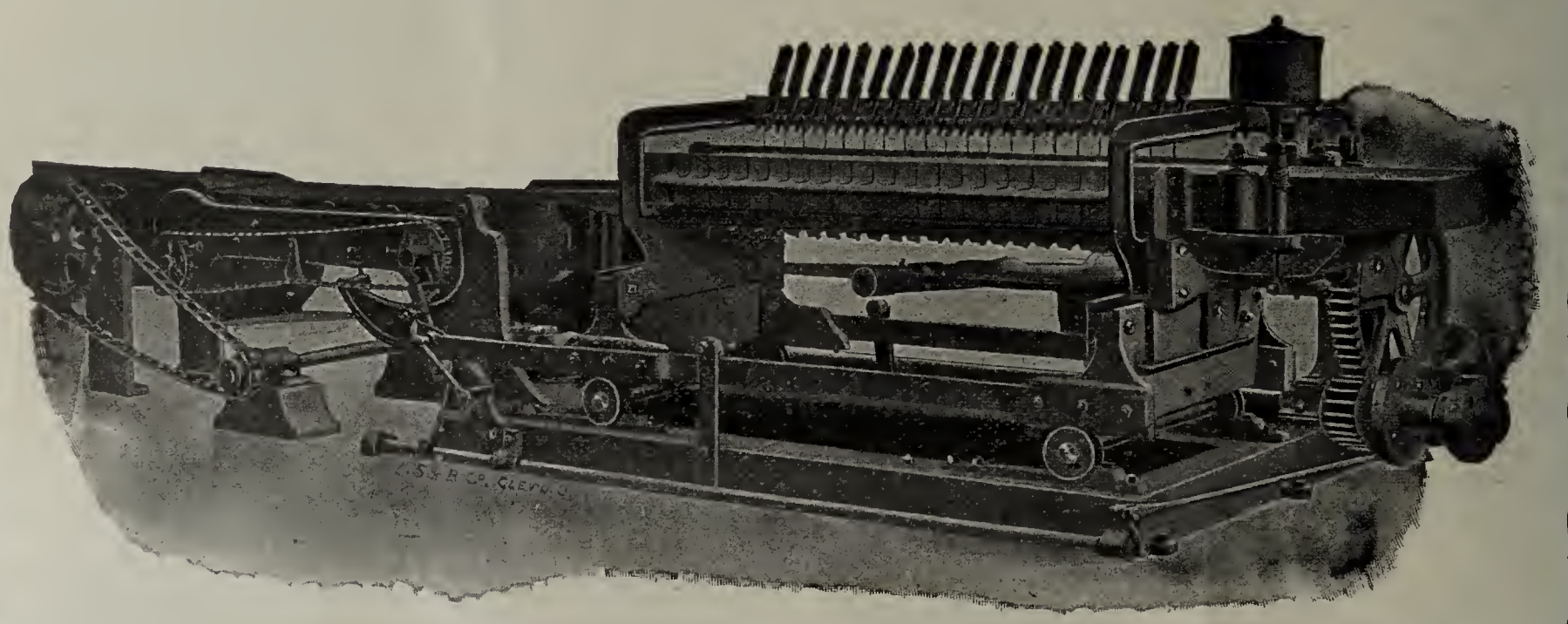

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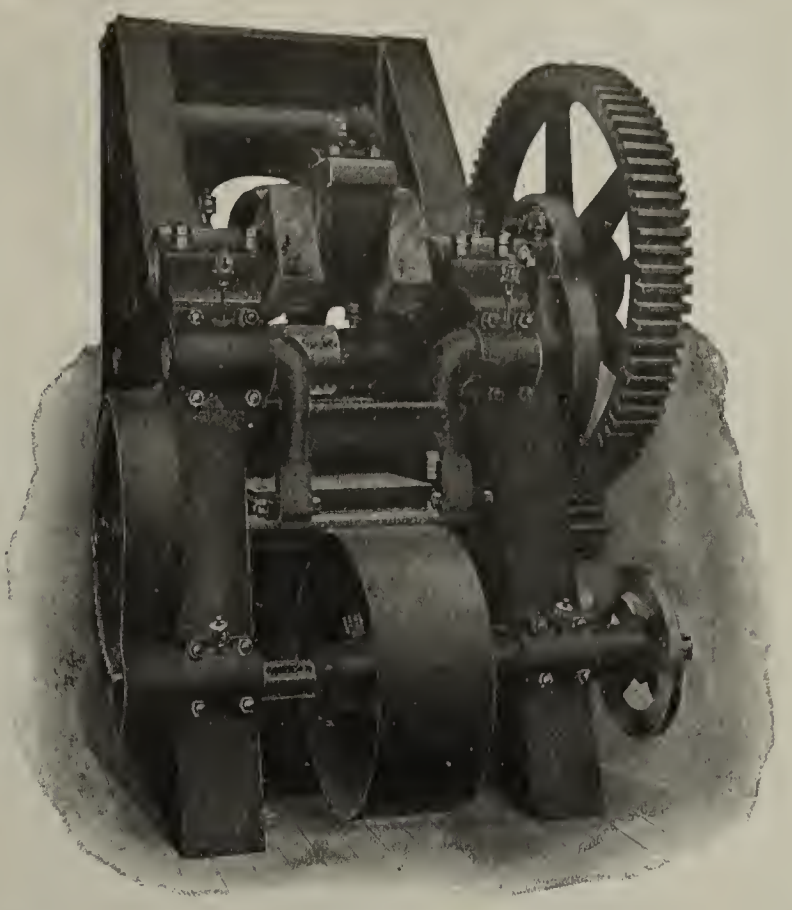

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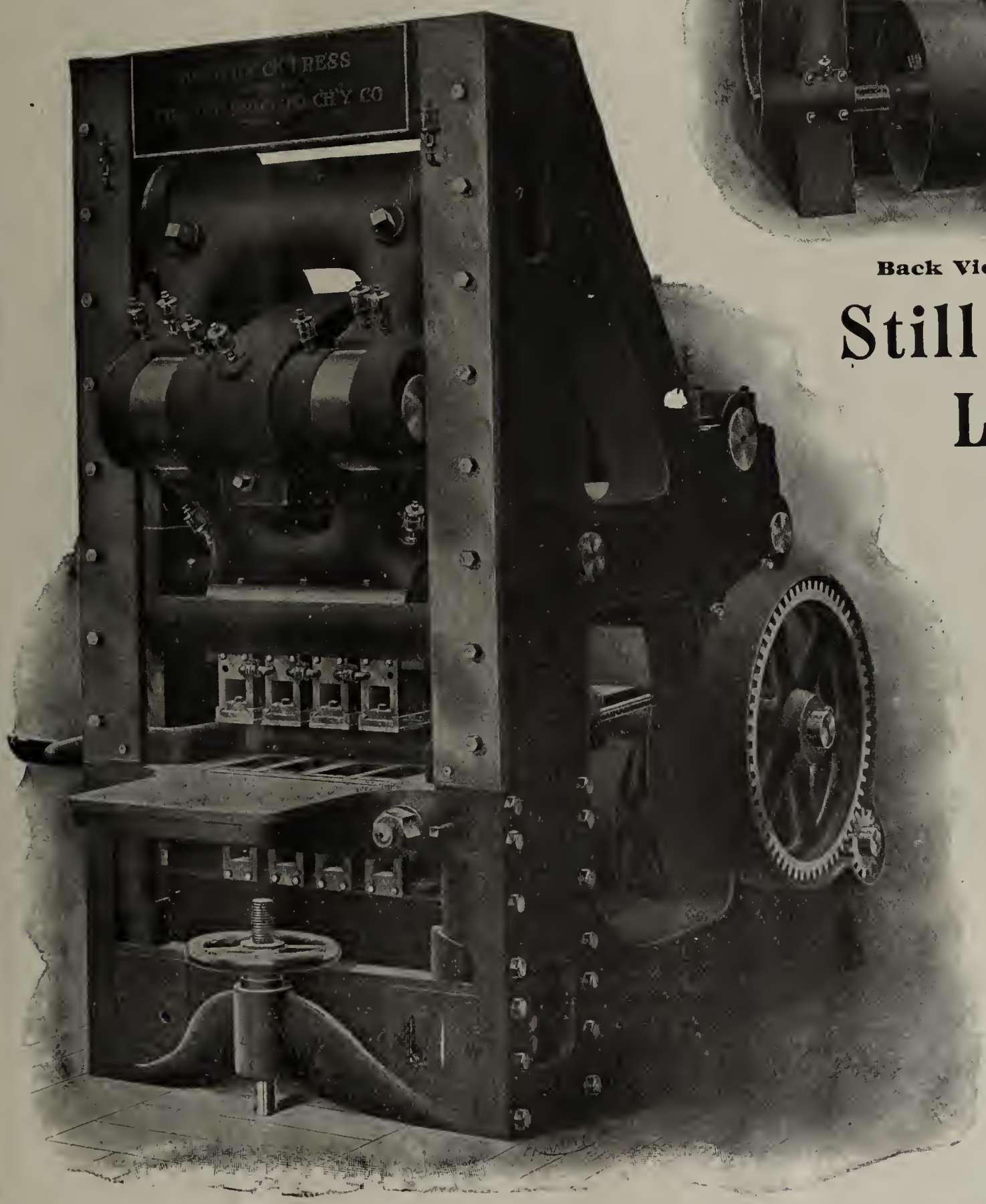

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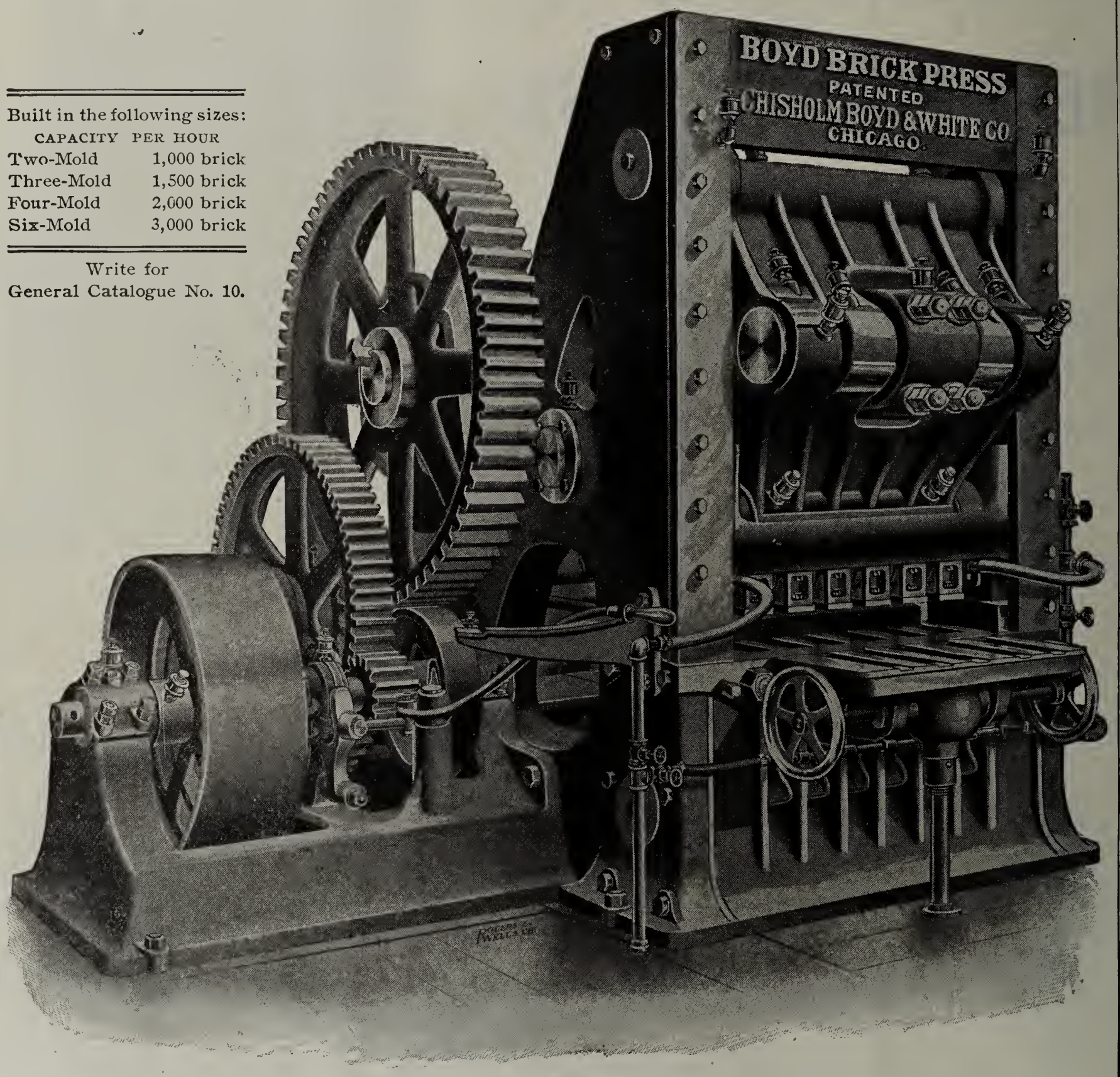

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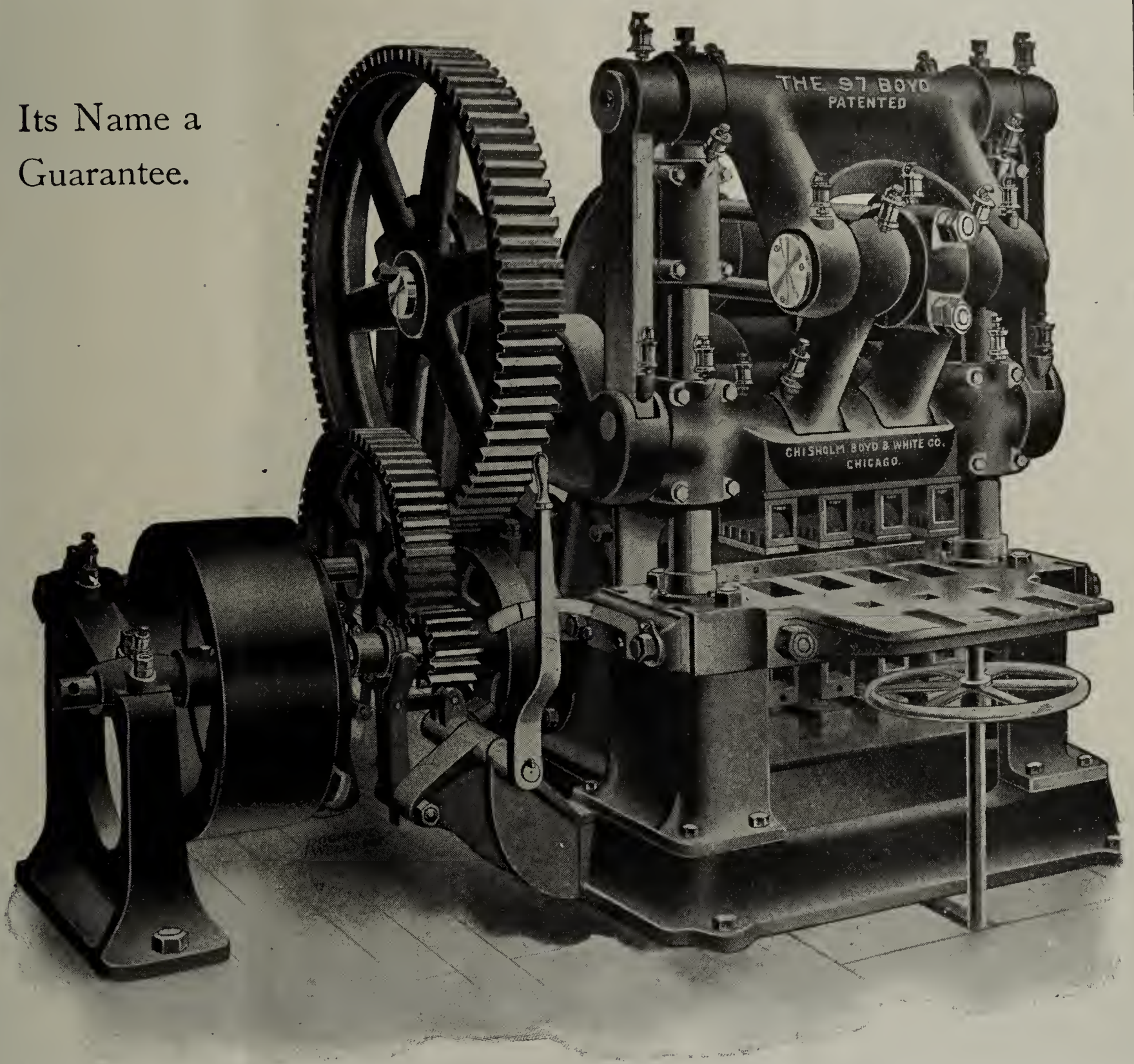
The '97 Model

Its Name a Guarantee.



THE '97 MODEL BOYD BRICK PRESS has enormous strength and great durability; it is compact; the adjustments are convenient; it operates quietly and smoothly; the workmanship and material are of the best; the design ingenious, and shows the most perfect application of scientific and mechanical principles to the art of brickmaking.

THE BOYD is the only Brick Press provided with an independent adjusting device for regulating the amount of clay in the molds and the pressure on the brick. This feature positively ensures equal pressure and finish on both sides of the brick, and no granulated or soft centers.

Sent on trial and fully guaranteed. Seventy presses of this pattern now in use. Cannot be broken in pressing brick. Write for descriptive catalogue No. 9.

Chisholm, Boyd & White Company

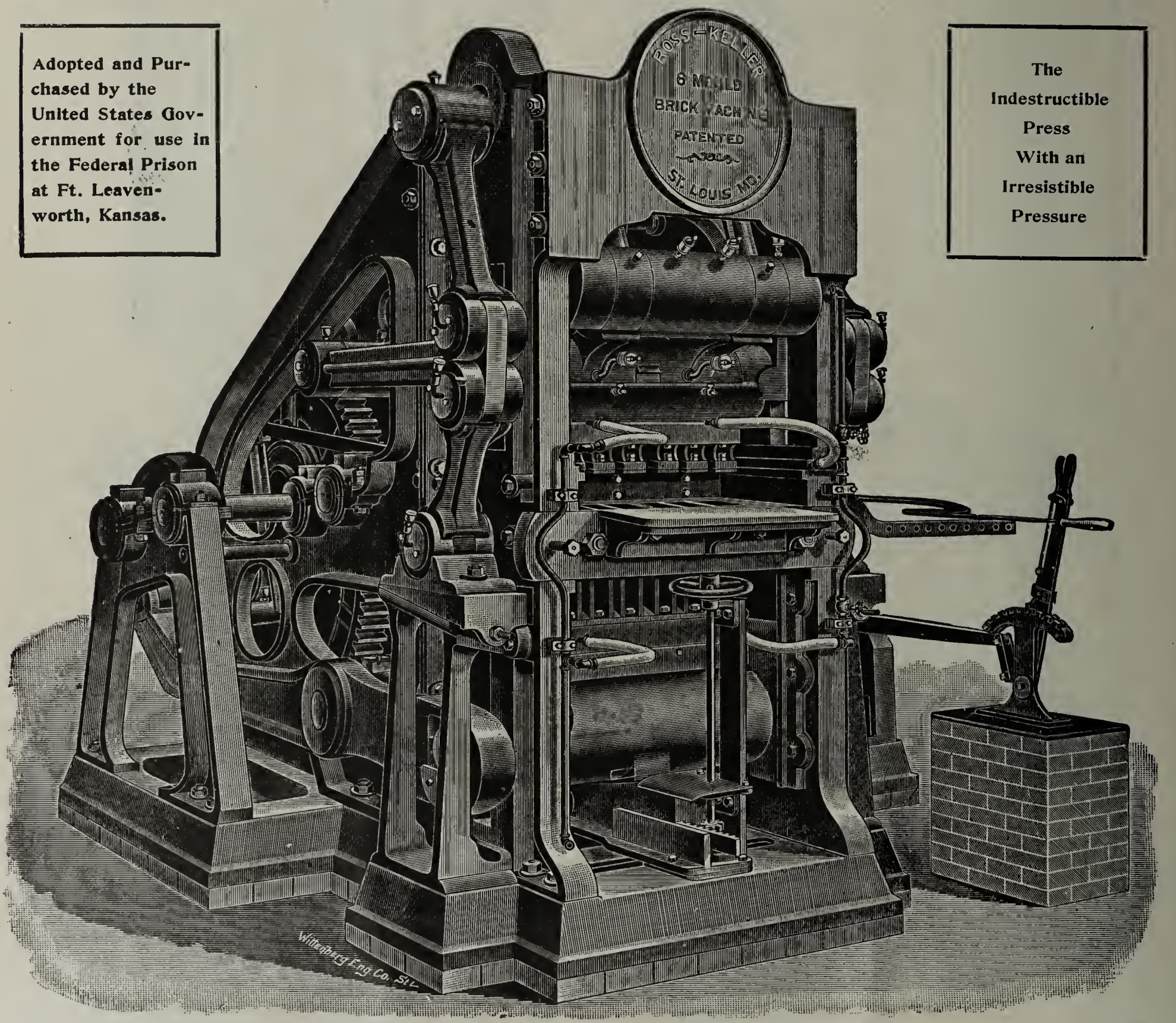
Office and Works, 57th and Wallace Sts. **CHICAGO, ILL.**

SAND-LIME BRICK MACHINERY

We are building and equipping Sand-Lime Brick Plants complete and we guarantee satisfactory results : : :

We manufacture a full line of Clay & Shale Dry Press Machinery : : : : : : :

Adopted and Purchased by the United States Government for use in the Federal Prison at Ft. Leavenworth, Kansas.



The Indestructible Press With an Irresistible Pressure

For prices and particulars address

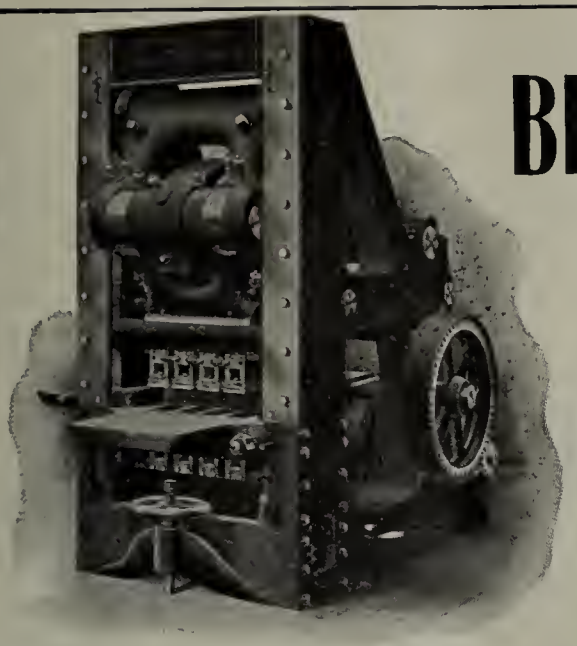
Ross-Keller Triple Pressure Brick Machine Co.

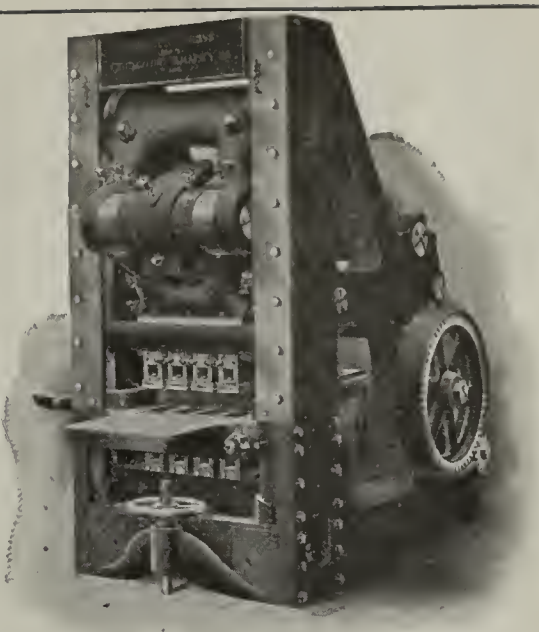
GEO. M. McDOWELL, Sales Agent for Pacific Coast, Portland, Ore.

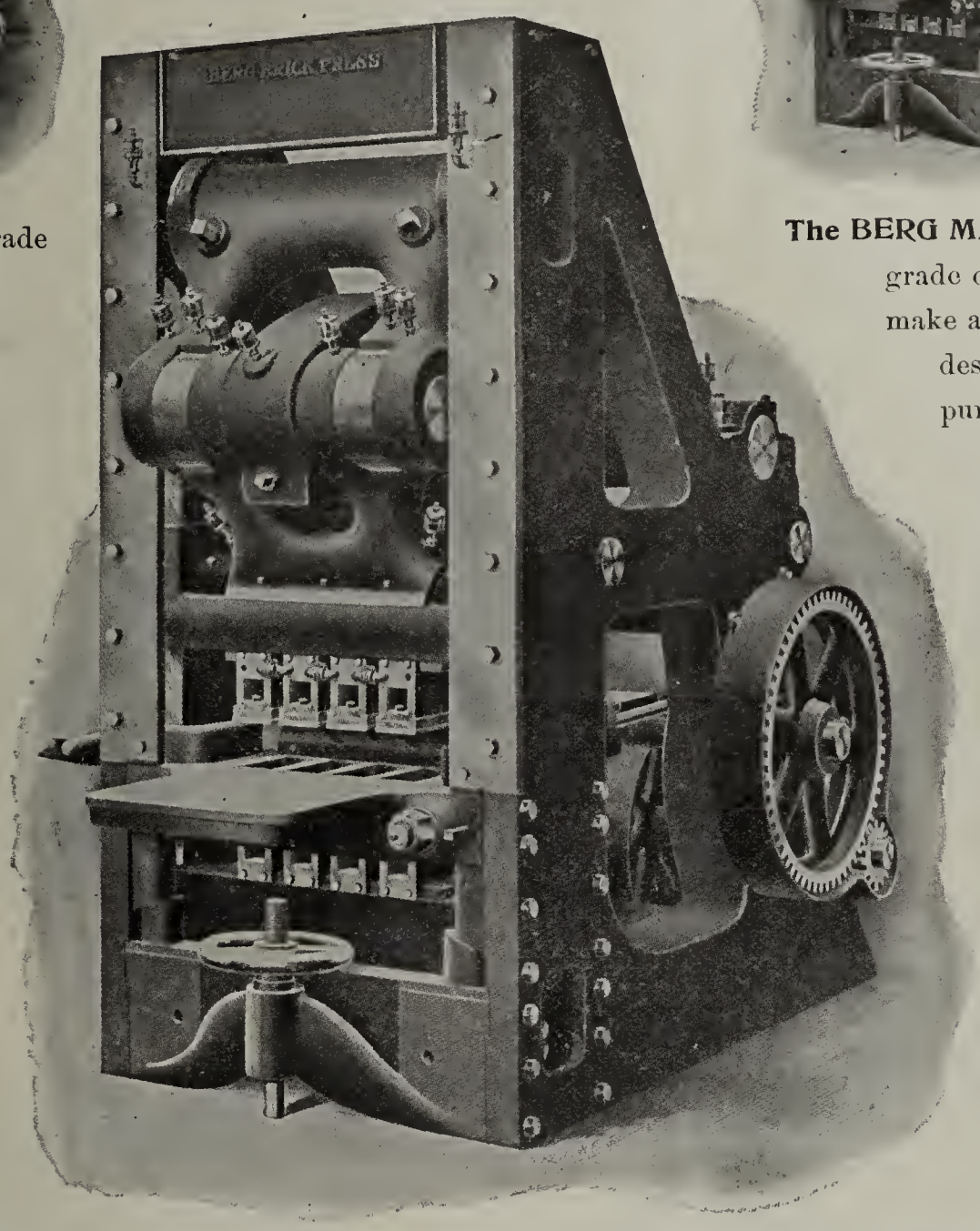
FULLERTON BUILDING, ST. LOUIS, MO., U. S. A.

BERG BRICK PRESS

The highest development of the Art of Brickmaking Machinery so pronounced by the United States Government.







The BERG for the highest grade of pressed brick of shale or clay. It makes all kinds of shapes and sizes of brick. Changes from one shape to another can be made in less than an hour's time.

The BERG MAKES the highest grade of fire brick. Can make all kinds of shapes desired for fire-brick purposes.

First-Class Workmanship. Cut Gearing. Fully Warranted.

Three distinct pressures make the brick evenly pressed all through. No granulated centers of the brick.

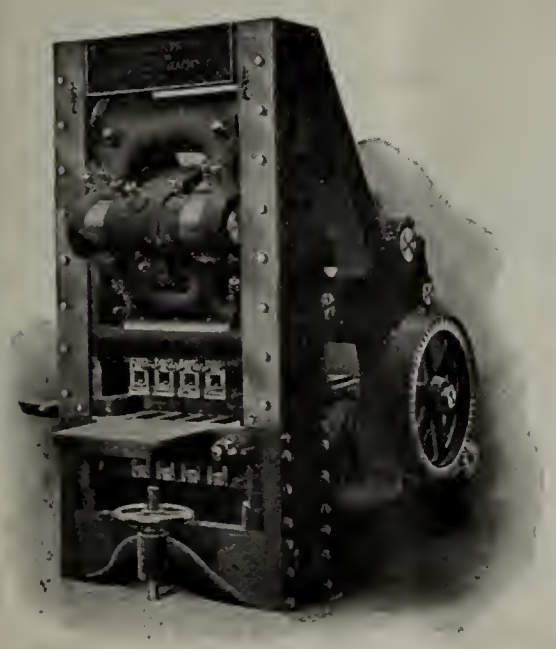
The BERG makes the best sand-lime brick and cheapest because it is the strongest machine and gives the highest pressure. Thirty-five sand-lime plants in United States use the **BERG** Brick Press SUCCESSFULLY.

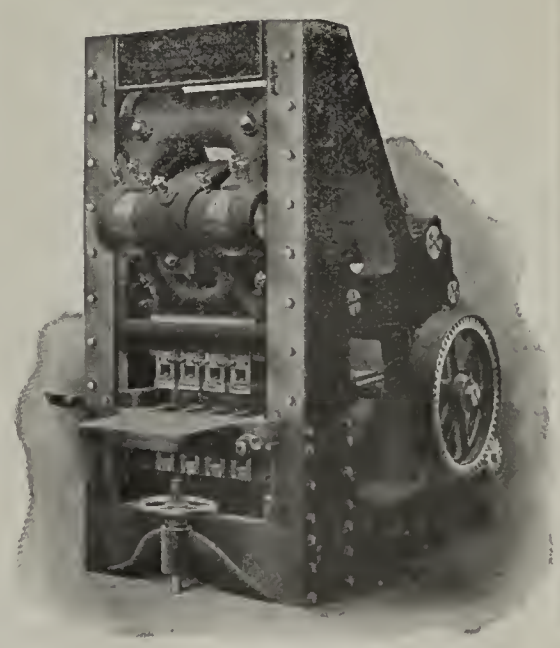
The BERG is the best for sand and cement because of its strong pressure. Uses less cement, makes cheaper brick.

The 1905 Berg Press

Many other steps further forward in improvement and highest grade of material and workmanship, also cut gearing. Fully guaranteed as to its success. Manufactured by its inventor in Toronto, Canada, at the Bertram Engine Works Co. Plans and specifications on the different kinds of plants furnished, also all equipments.

For prices and full particulars, address





A. BERG

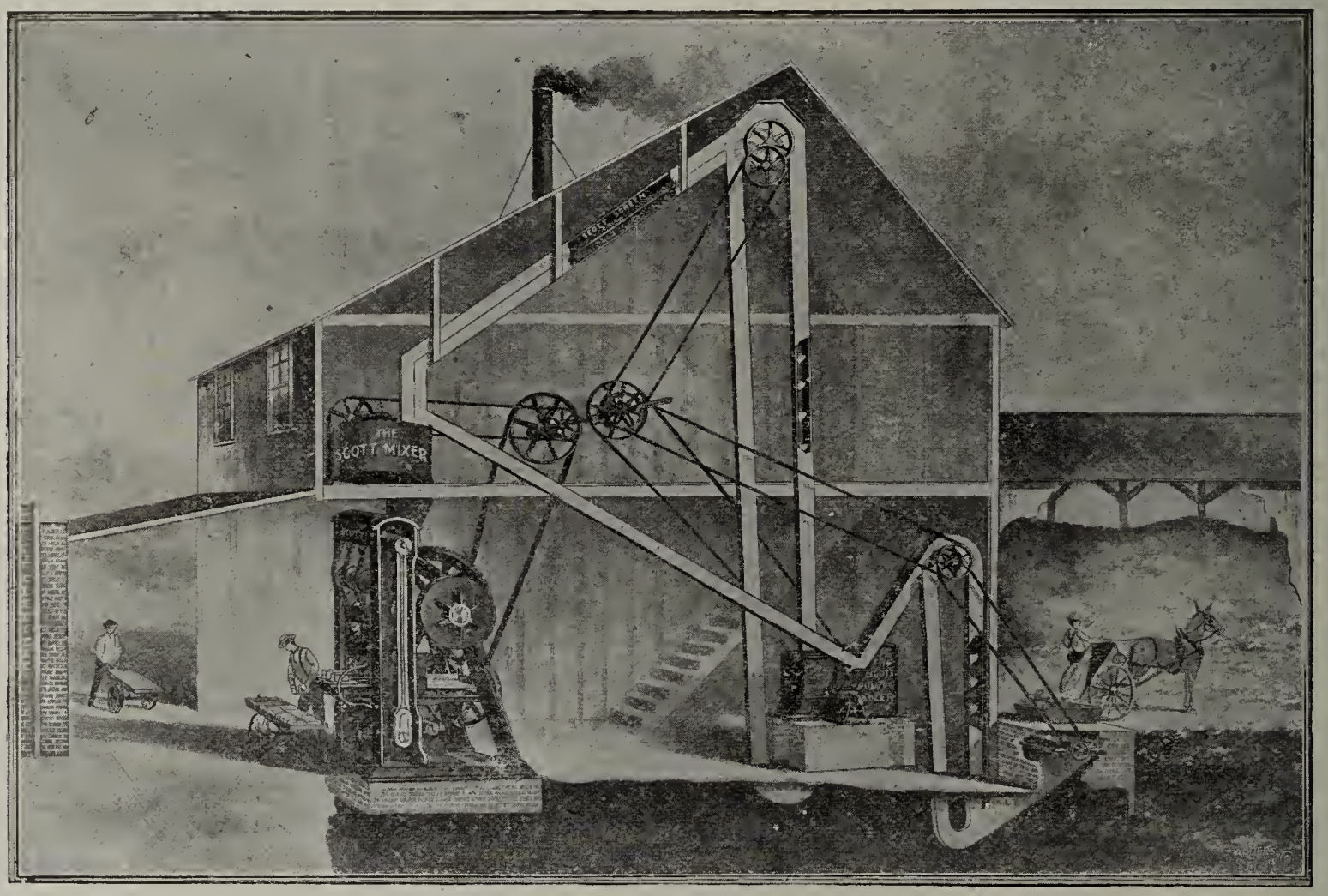
THE BERTRAM ENGINE WORKS

Toronto, Ontario, Canada

Rojestvensky

certainly was unfortunate, for while he had the knowledge of tactics within himself he was not backed up with the necessary *equipment, enthusiasm, organization.*

In waging our war against competition we claim that in our campaign we know that our facilities for manufacture are the very best; our organization is practically complete, and our enthusiasm—well, you can't imagine how strong that is unless you are operating an Andrus Press.

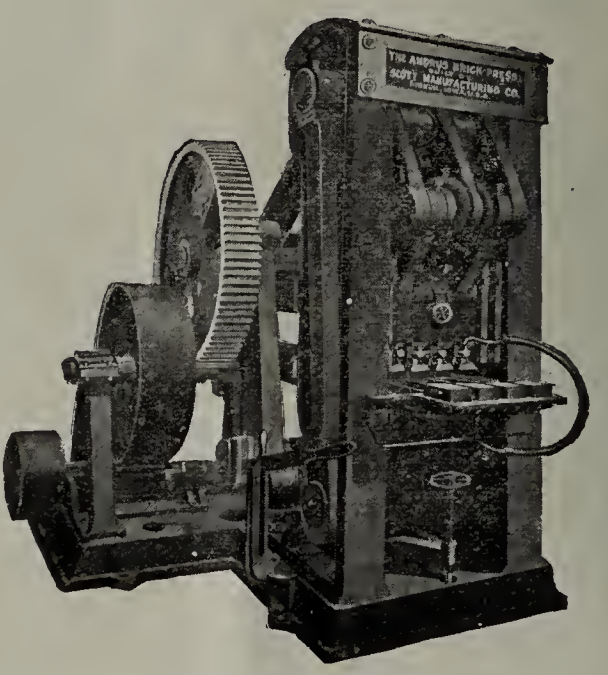


THE SCOTT NOISELESS PLANT.

We Install Complete Plants

Our Drafting Department Is At Your Service.

We cordially invite the brickmaker and capitalist to come to our city and see our presses in operation in the "St. Louis District," which is conceded to be the greatest Dry Press center in the world.



THIS IS THE PRESS THAT SCOTT BUILDS.

SCOTT MANUFACTURING CO.,

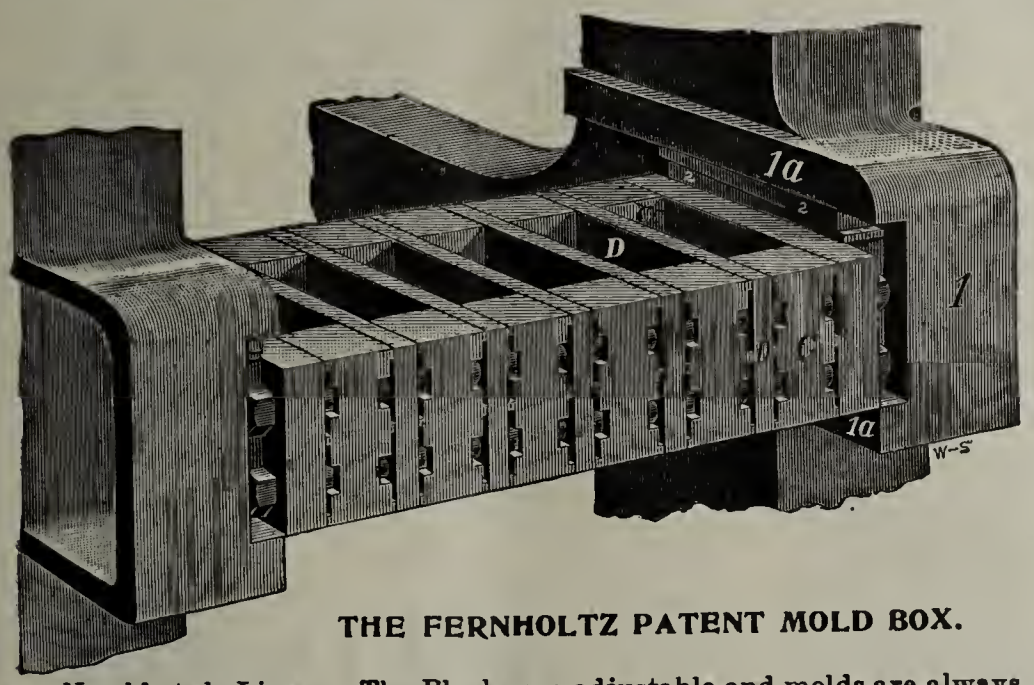
Commonwealth Trust Building, Saint Louis, Missouri.

The Fernholtz Brick Machinery Co.

Manufacturers of

The Celebrated Fernholtz Dry Press

Four mold Press 20,000 daily capacity. Six mold Press 30,000 daily capacity

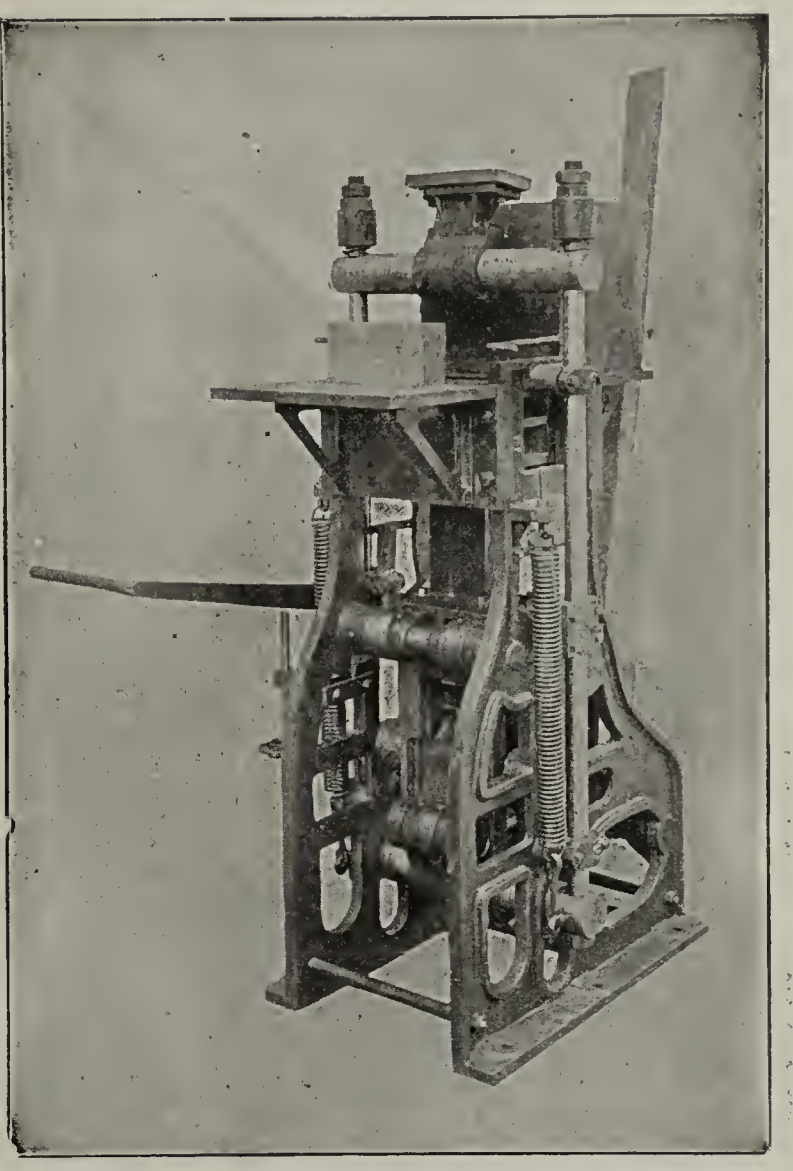


THE FERNHOLTZ PATENT MOLD BOX.

No old style Liners. The Blocks are adjustable and molds are always one size. We have put them in most all makes of Dry Press machines. Easily and quickly adjusted. They are made entirely out of chilled iron, the hardest known metal.

GRATH PATENT HAND POWER PRESS.

Especially adapted for ornamental designs Any size brick up to 12⅝ inches long, 10 inches wide and 4¼ inches thick.
Brick set into kiln direct from press.

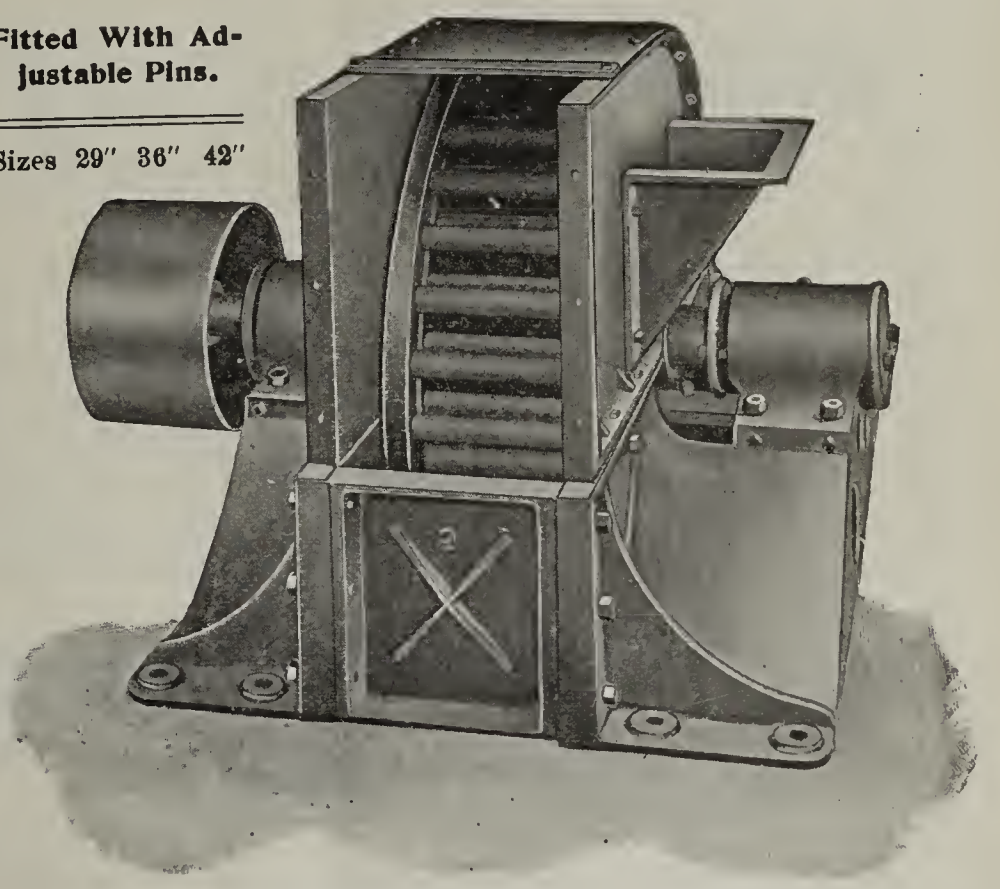


GRATH PATENT HAND POWER PRESS.

A GOOD MIXER IS ALWAYS APPRECIATED.

Fitted With Adjustable Pins.

Sizes 29″ 36″ 42″

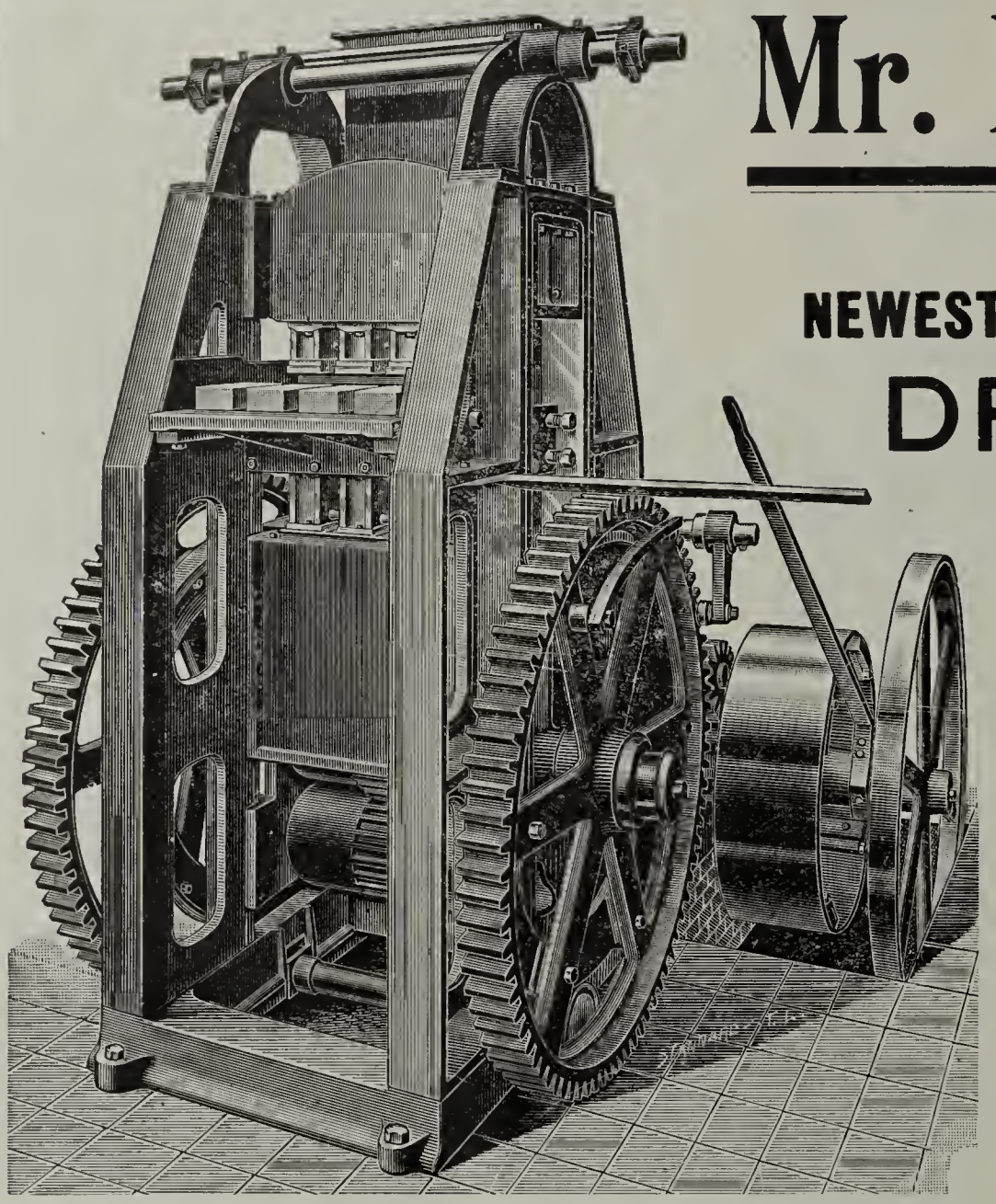


THE FERNHOLTZ CLAY PULVERIZER.

The Fernholtz Brick Machinery Co.

Cable Address "Fernbrick." Western Union Code.

Boyle Avenue and Old Manchester Road, ST. LOUIS, MO., U. S.A.



Mr. Brickmaker

Are you looking for the

NEWEST, BEST AND CHEAPEST IN

DRY-PRESS BRICK MACHINES?

If so, you cannot afford to overlook the strong points of excellence and the remarkable **simplicity, strength** and **efficiency** fonnd in

THE RELIANCE

"The Machine with a Future"

Radical departure from old principles.

Unique in construction, sound in principle, unrivaled in attainment!

Makes not only Brick but Money

A FEW POINTS:

1. Weight and Floor Space about one-half that of any other Brick Machine.
2. Compression of Clay Perfect and Uniform. (Entirely new Principle).
3 Every Brick is a Face Brick. There are No Granulations.
4. Adjustment permits any pressure desired (A Feature peculiar to the **RELIANCE.**)
5. Cheapest because having fewest parts. (Also cheapest to keep in repair).

EMINENTLY PRACTICAL AND ECONOMICAL

WRITE TO-DAY FOR PARTICULARS. SEND CLAY FOR SAMPLE BRICKS.

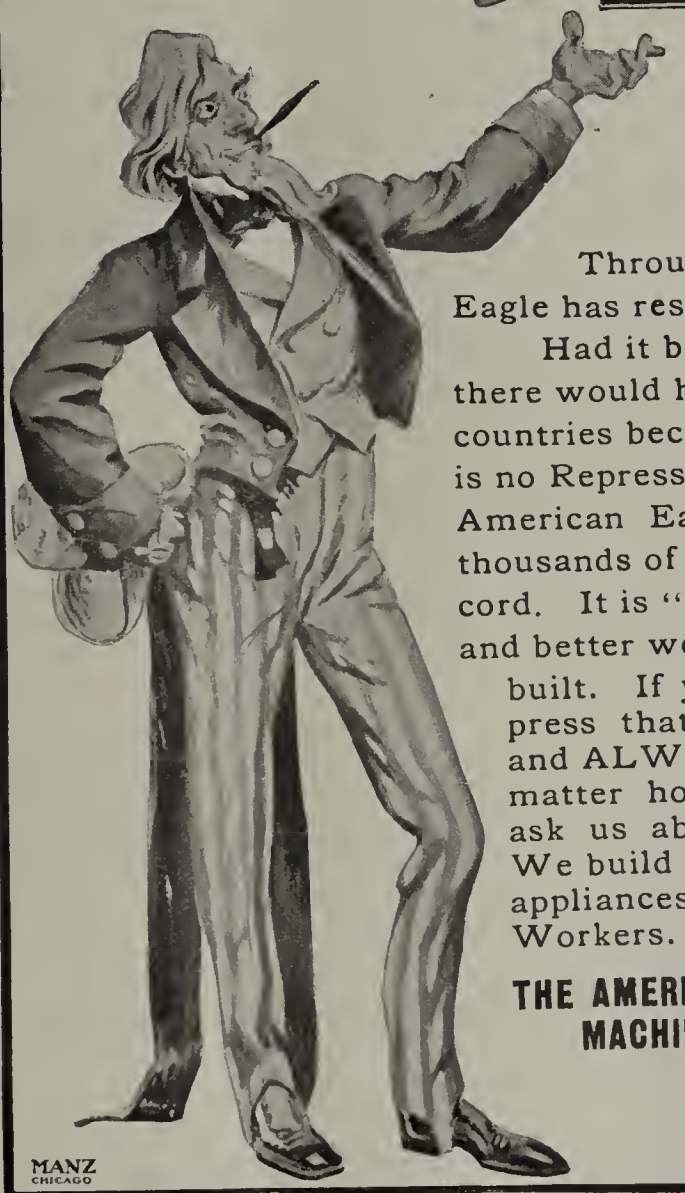
Made By the

RELIANCE MACHINE AND TOOL WORKS

ST. LOUIS, MO.

"I Swan: another triumph for the AMERICAN EAGLE"

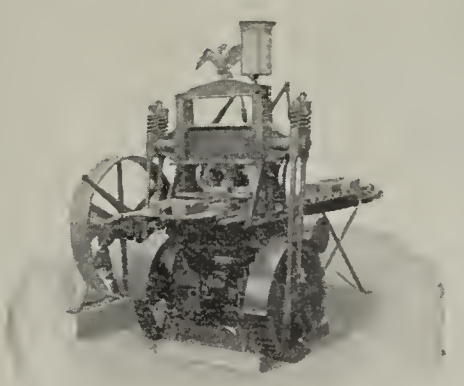
Peace Restored



The American Eagle

Through the help of Uncle Sam the American Eagle has restored peace between Russia and Japan.

Had it been a question of the merits of Represses there would have been no argument between the two countries because both Russia and Japan concede there is no Repress in the world which will compare with the American Eagle. In this opinion Uncle Sam and thousands of his Clay Working sons are heartily in accord. It is "Built Right and Runs Right." Does more and better work with less repairs than any other press built. If you want a Repress that is best NOW, and ALWAYS will be, no matter how you work it, ask us about the Eagle. We build all machines and appliances needed by Clay Workers.



THE AMERICAN CLAY MACHINERY CO. Bucyrus, O. U. S. A.

MANZ
CHICAGO

SEWER PIPE MACHINERY

PRESSES AND DIES

I. E.

TRAP DIES

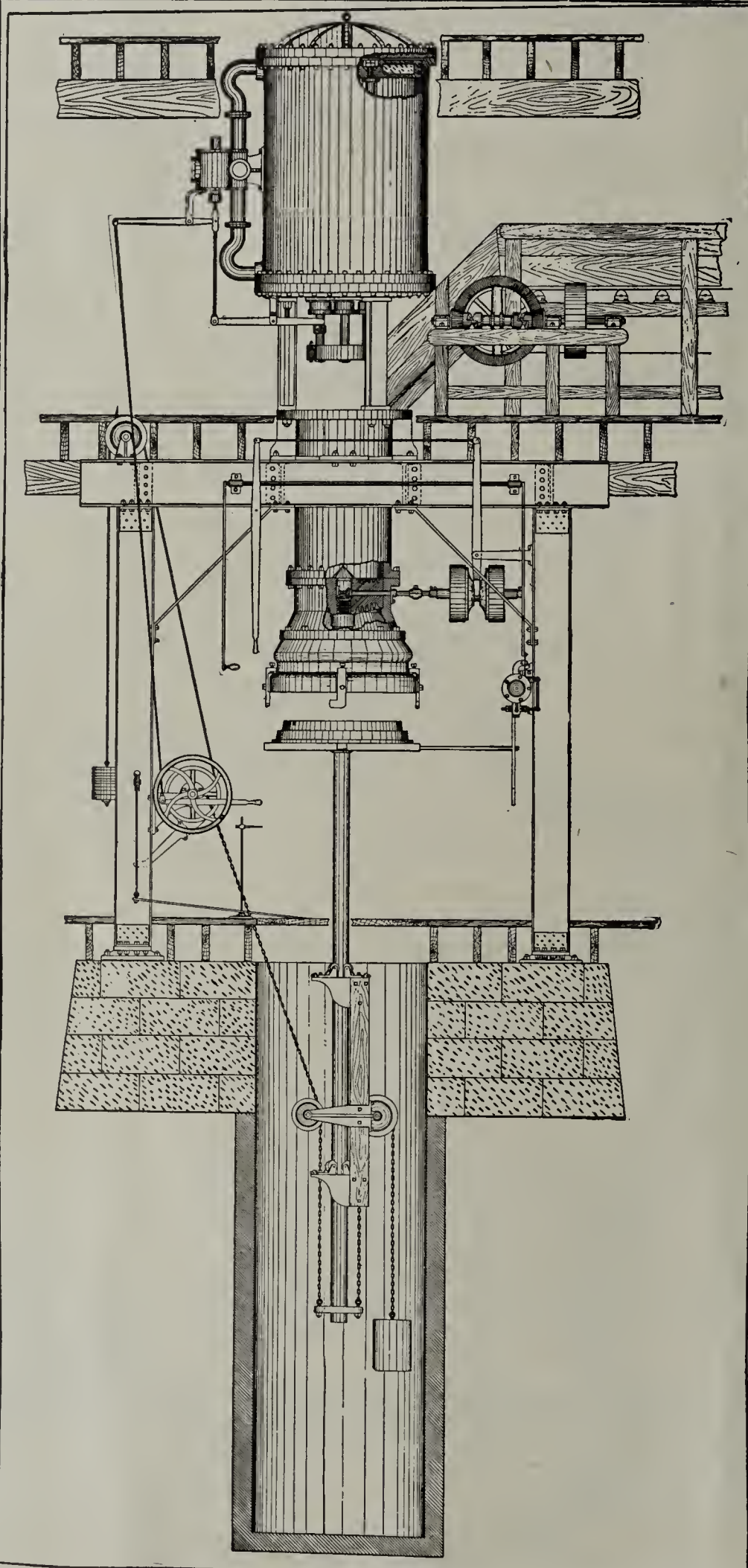
CLUSTER TILE DIES

FLUE DIES

COPING DIES

RING DIES

TUYERE AND SHAPE DIES FOR BESSIMER FURNACES



NOZZLE AND SLEEVE PRESSES

TUYERE PRESSES

DOUBLE END HORIZONTAL STEAM PRESSES

DRY AND WET PANS

CLAY MILLS COMBINATION CLAY PANS

CLAY WORKING TOOLS

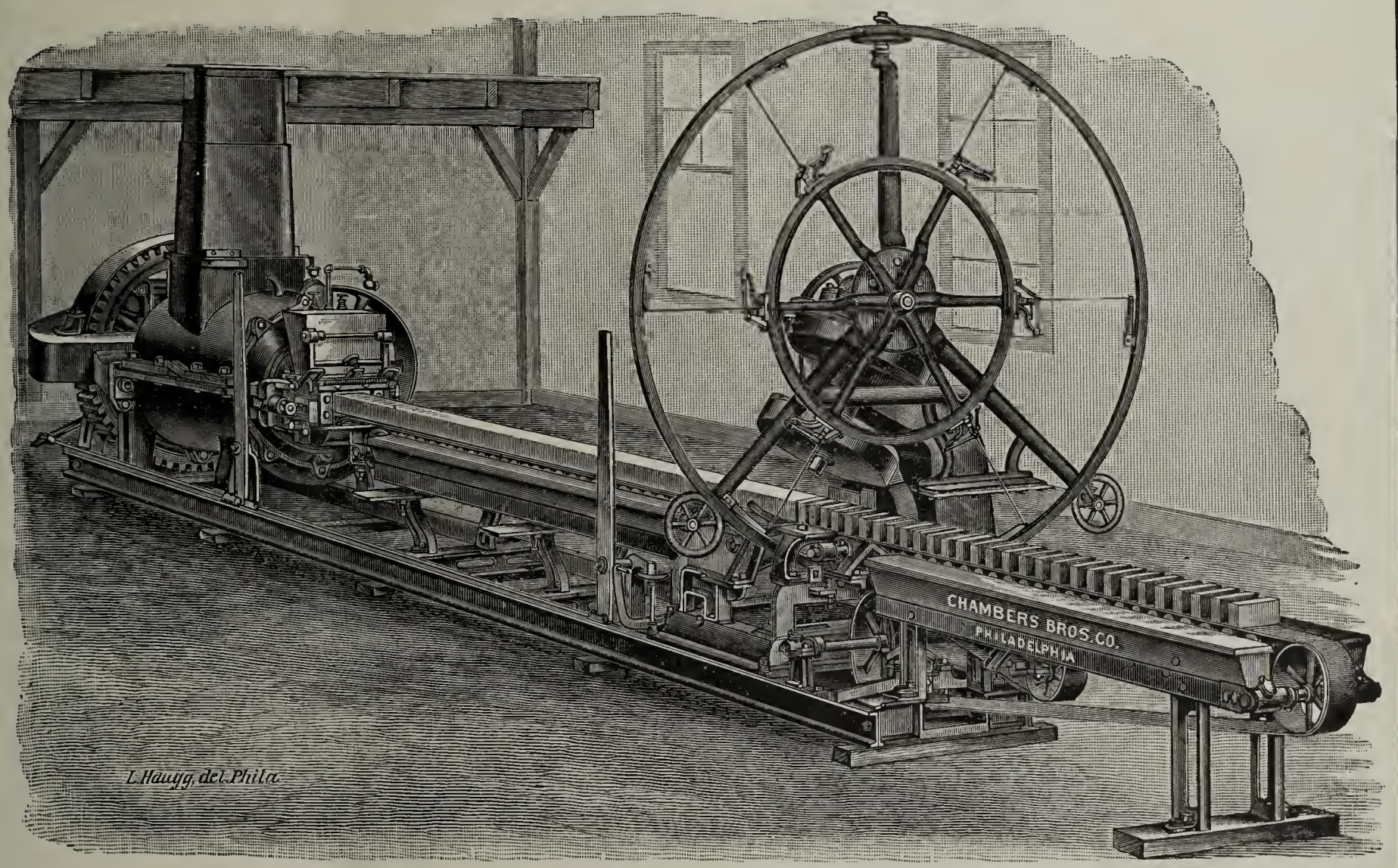
THE TURNER VAUGHN & TAYLOR CO.

WRITE FOR PRICES STATING CAPACITY

Cuyahoga Falls, Ohio, U. S. A.

MACHINERY FOR BUILDING BRICK
AND FOR STREET PAVERS

ROUND CORNER PAVING BRICK WITHOUT REPRESSING



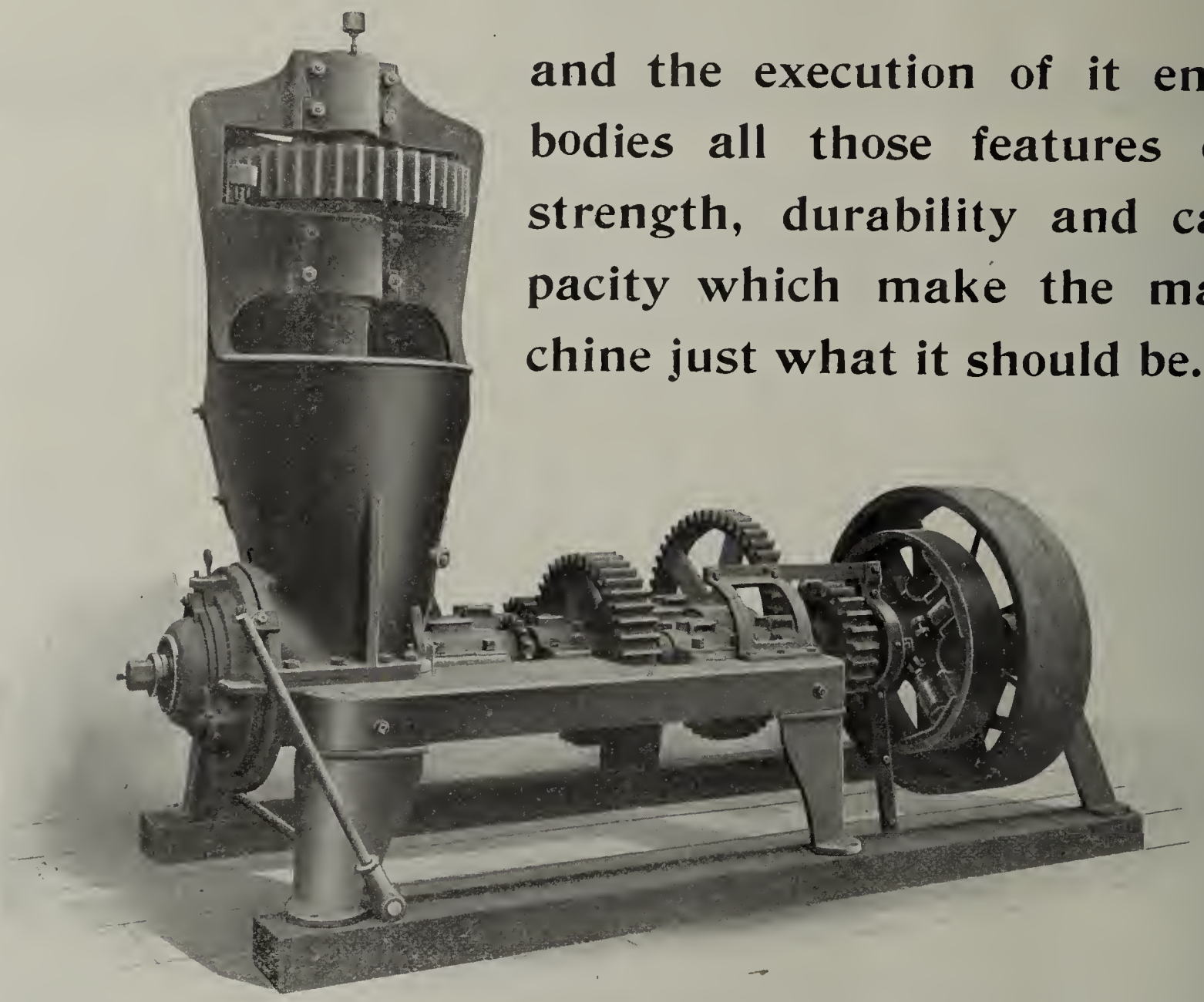
THE CHAMBERS AUTOMATIC SIDE-CUT BRICK MACHINE.

Automatic End Cut Brick Machines of five sizes, having capacity from 10,000 to over 100,000 brick daily under favorable conditions.

CHAMBERS BROTHERS COMPANY
52D AND MEDIA STREETS
PHILADELPHIA, PA.

E. R. FRAZIER, Chicago Agent,
59 West Jackson Boulevard.

The Design is Right



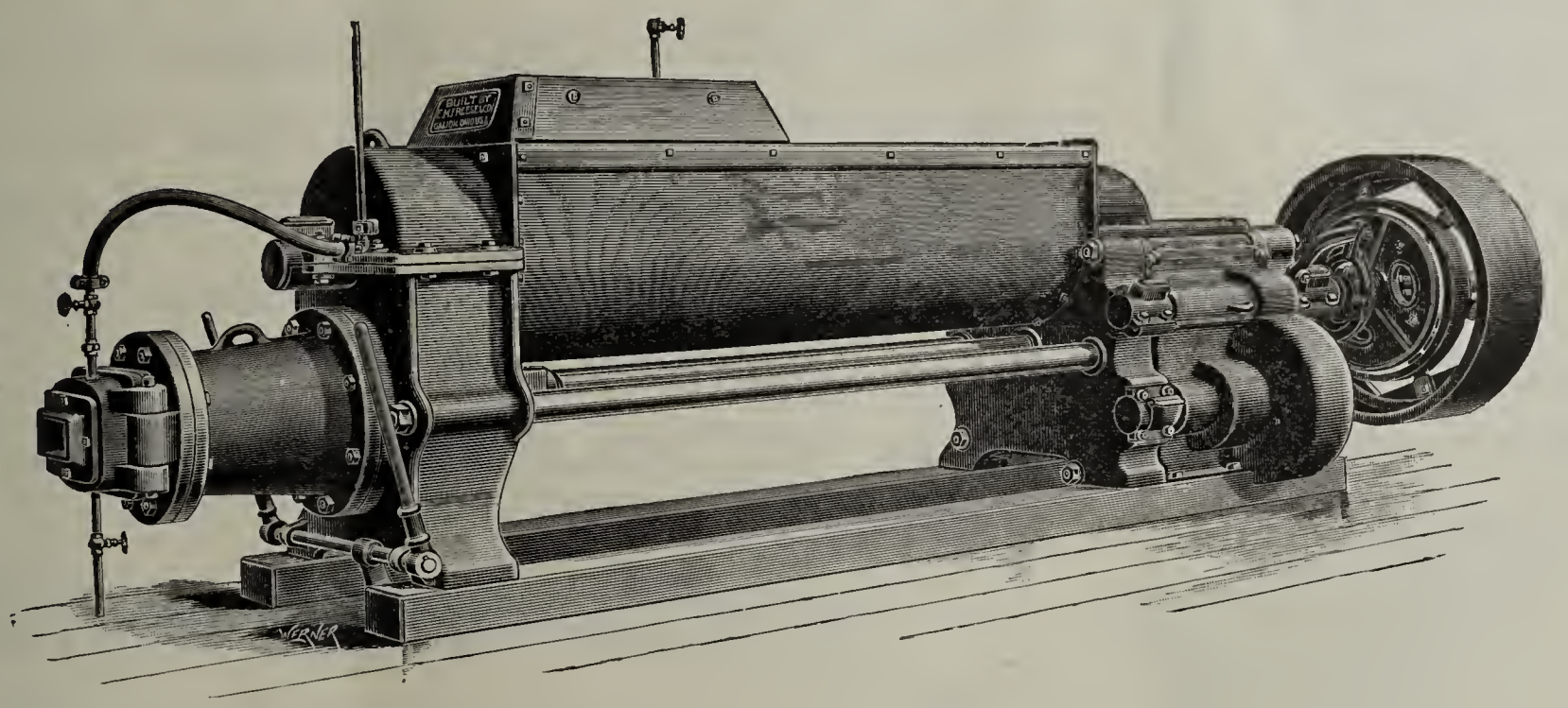
and the execution of it embodies all those features of strength, durability and capacity which make the machine just what it should be.

The Brewer No. 10 A

is a machine for making drain tile, brick and hollow blocks. It is intended for those plants which produce those kinds of ware with a single outfit. It is the latest production of builders who have been at the business for fifty years, and if there's anything better in this market it's hid away where people can't see it. Satisfaction or no sale are the terms under which you can buy it. Price no more than it's worth. Ask for particulars.

H. BREWER & CO., TECUMSEH, MICHIGAN.

UNION BRICK MACHINES



We build these Machines in five sizes. Capacities to 10,000 brick per hour.

Several hundred are in everyday use. They do first-class work and are convenient, economical and durable. This can be verified by investigation.

We also build Brick Machines with separate Pug Mill.

Don't forget our Automatic Cutters. **They give satisfaction.**

State your requirements and let us furnish particulars.

E. M. FREESE & CO.

GALION - - - - OHIO

A Long Argument

IT doesn't take a long argument to convince a Practical Brickmaker that the WONDER is THE machine—just see it work—it speaks for itself. Would the experience of a fellowcraftsman interest you? Read some extracts from their letters. Our machines in operation are our best advertisements. They show their merits, and MERIT WINS.

DES MOINES, IOWA, AUG., 17th, 1905

The Wallace Mfg. Co, Frankfort, Ind.,
Gentlemen:

In reference to the machine, I wish to say that the same is giving us entire satisfaction. For a time it was not speeded up enough to do the work we thought it should, and pulled heavily, but by changing pulleys we have the same running now at 300 revolutions. This speed makes the machine run very much lighter and turns out a satisfactory number of blocks.

The goods we are manufacturing are not laminated, very dense, and in a word, that might be called the Big Wonder quality. We are making the finest blocks in the State to-day, and have sold all we can manufacture for the next few months.

Very respectfully yours,
THE DES MOINES CLAY MFG. CO.,
Per O. C. Pixley, Vice-Pres. and Supt.

ORESTES, IND., JUNE 26, 1905

The Wallace Mfg. Co., Frankfort, Ind;
Gentlemen:

The Mill is giving splendid satisfaction. We made about 16,000 four-inch tile in one day and think we could have made 20,000 if we had been able to keep clay in. We have just finished a run of six-inch, making one floor of our sheds 74 x 40, two tile high, set close, in eight hours.

Yours truly,
ORESTES DRAIN TILE CO.

FOR FURTHER INFORMATION, WRITE

The Wallace Manufacturing Co.

Frankfort, Ind., U. S. A.

Leadership means Superiority, which tacitly acknowledged

SHOWS UNDENIABLE MERIT

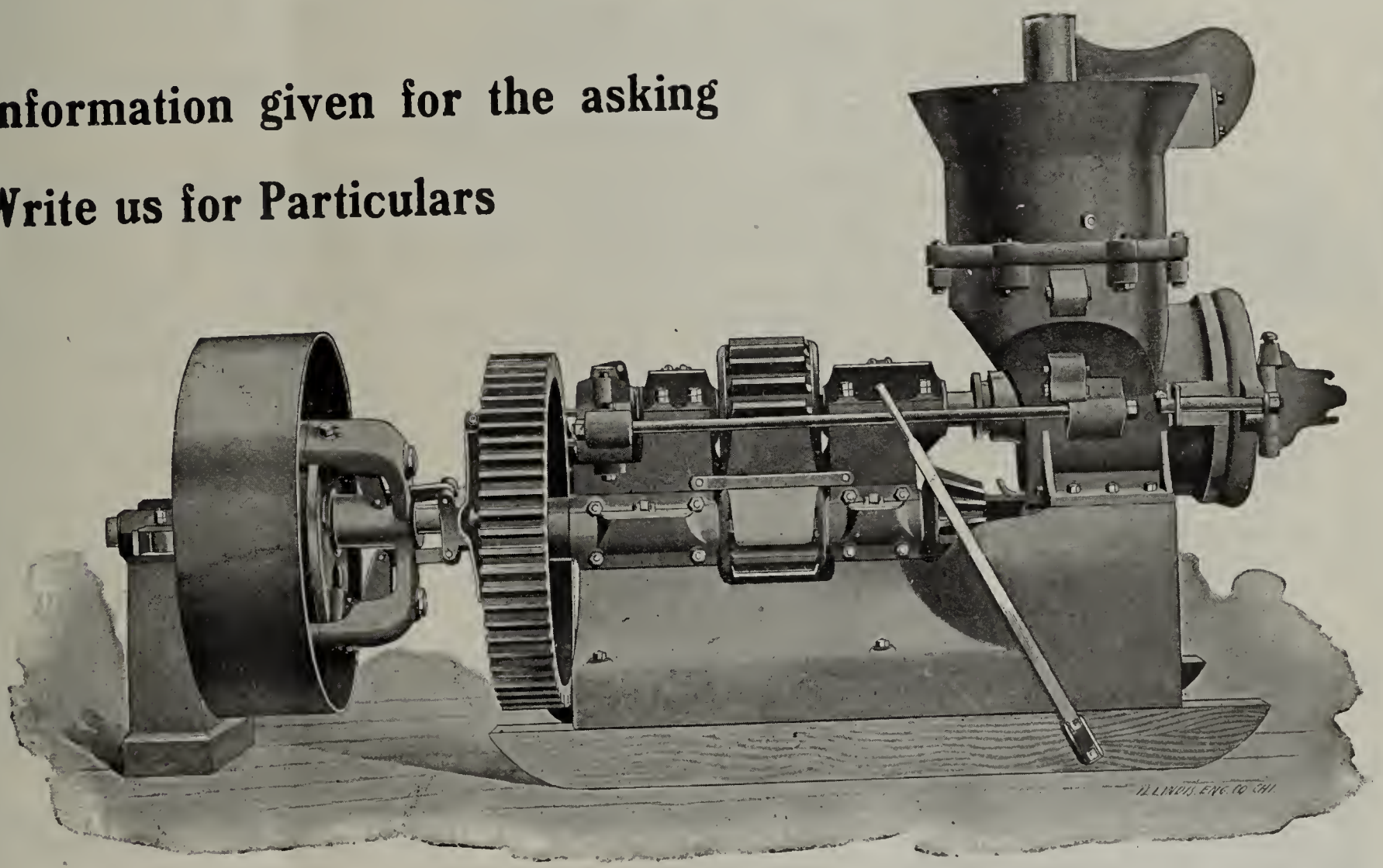
Success is based upon intrinsic worth and the success of the "WONDER" is phenomenal

Correct principal and thorough integrity in construction have made its supremacy unquestionable.

It works where others fail.

Information given for the asking

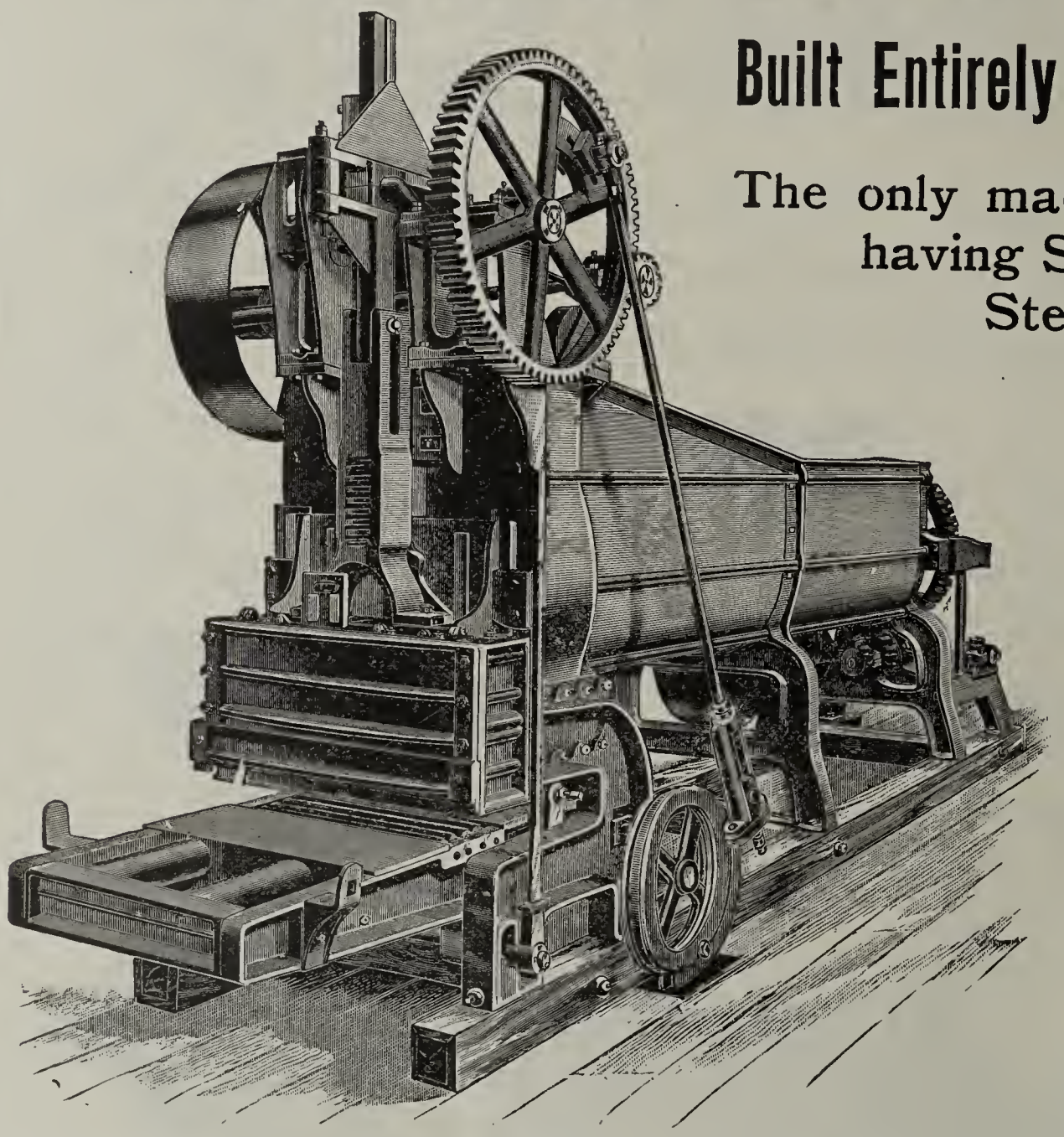
Write us for Particulars



The Wallace Mfg. Co.

FRANKFORT, IND., U. S. A.

THE POTTS
HORIZONTAL BRICK MACHINE



Built Entirely of Iron and Steel.

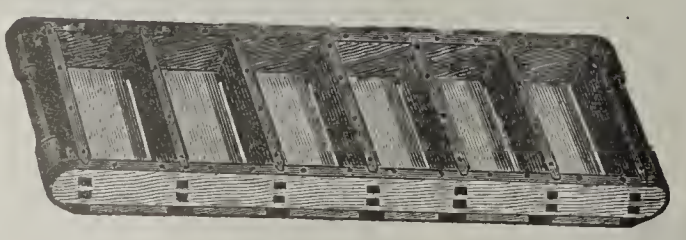
The only machine of this class having Steel Gear and Steel Shaft.

Built of the Best Material by the Best Workmen.

Simple, Strong and Durable.

No extra pug mill required to enable working the clay direct from the bank. Its great strength enables working the clay as stiff as practicable, insuring brick which will be STRAIGHT and SQUARE.

THE LEADER OF ALL SAND MOULD MACHINES.



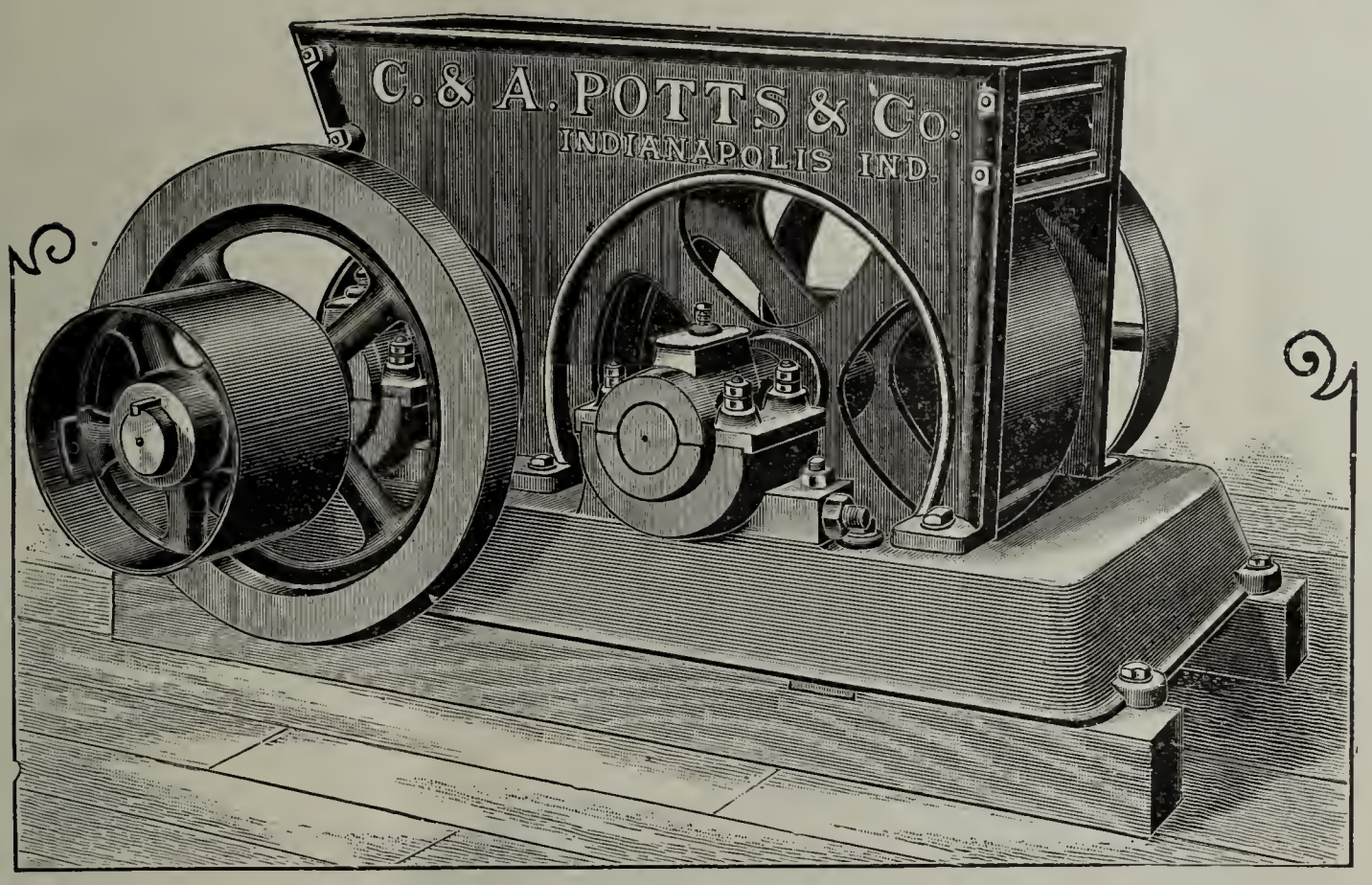
BRICK MOULDS A SPECIALTY

QUALITY IS OUR AIM.

We manufacture a complete line of Brick Yard Supplies. Write for prices.

C. & A. POTTS & CO., Indianapolis, Ind.

THE POTTS DISINTEGRATOR



Is not a spite machine, but is built the best possible. Having Heavy Chilled Rolls, Ring Oiling Bearings, Shafts of Steel and large in Diameter. The most successful machine for grinding out sticky clays and separating the stone.

THE POTTS MOULD SANDER

Simple in Construction,

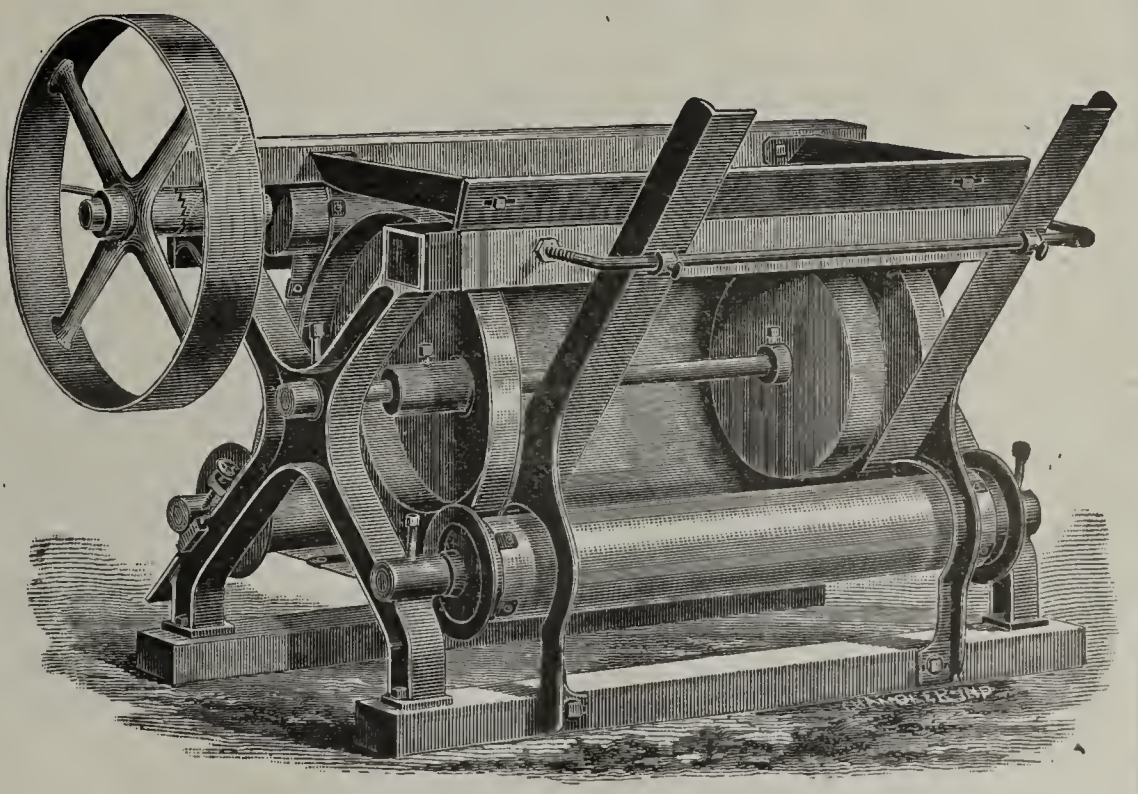
Strong and Durable,

Sands the Moulds Perfectly,

Never Strikes or gets Drunk,

Always Ready for Work,

No Brick Machine Complete without this Machine.



Patented February 5, 1889.

We make a specialty of equipping Sand Mould plants complete. We are the largest manufacturers of this class of machinery in the world. Write for prices.

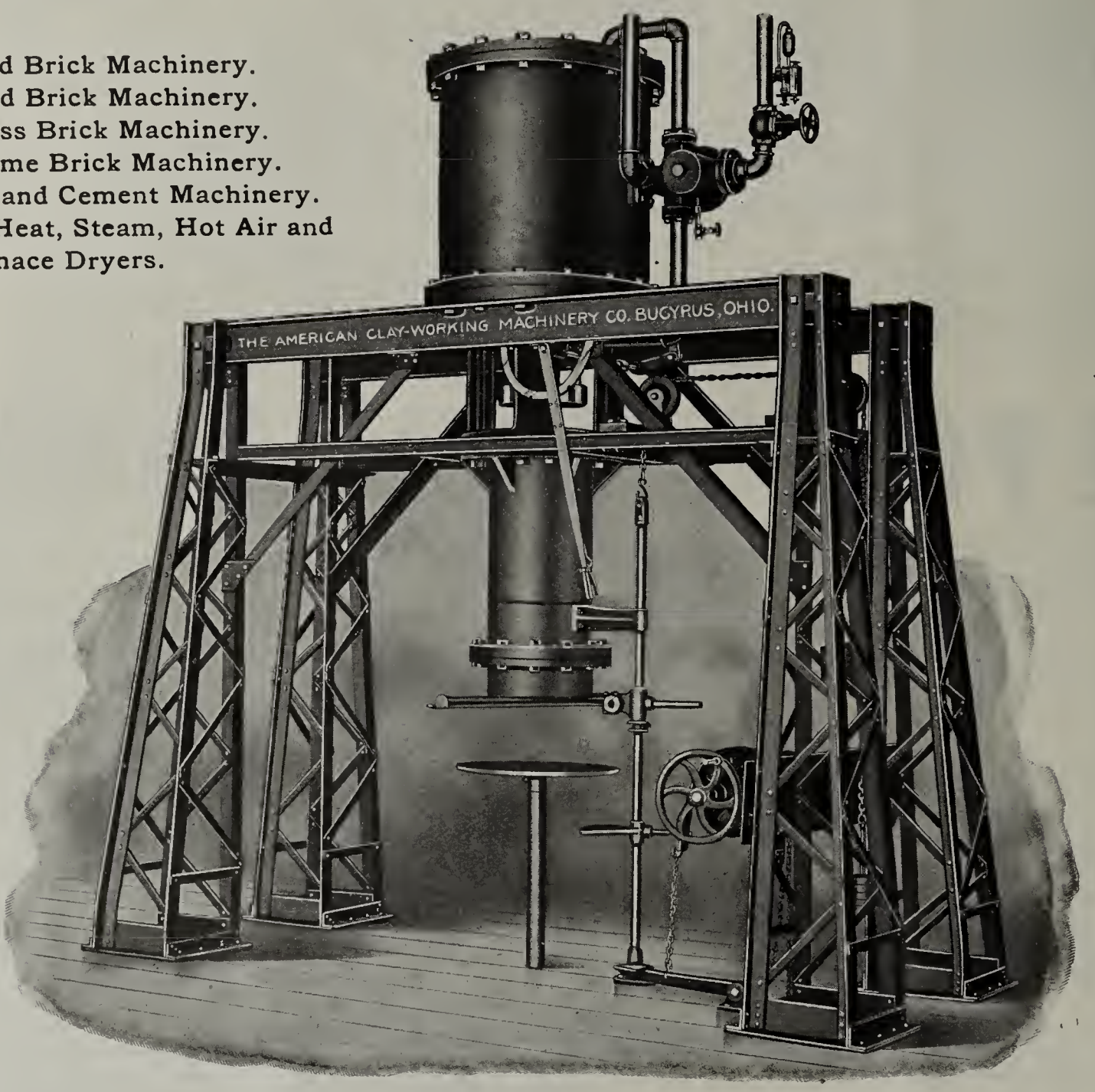
C. & A. POTTS & CO., Indianaoplis, Ind.

SEWER PIPE MACHINERY

Built Right Run Right

We build Complete Outfits for Sewer Pipe Plants. We have a line of presses that cannot be surpassed in economy of operation, convenience or capacity. All necessary appliances furnished. Send for Complete Catalogue. We build **everything** needed by the Clay Worker.

Soft Mud Brick Machinery.
Stiff Mud Brick Machinery.
Dry Press Brick Machinery.
Sand-Lime Brick Machinery.
Pottery and Cement Machinery.
Waste Heat, Steam, Hot Air and Furnace Dryers.



WE MAKE OUR OWN DRYERS AND CAN GUARANTEE THEM.

THE AMERICAN CLAY MACHINERY CO.

BUCYRUS, OHIO

Copyright, 1905, by Abbe Engineering Company.

THE above cut shows a Jumbo Pebble Mill recently shipped to one of the largest potteries in this country.

Size of 6'0" diameter x 8'0" long.

Pebble Mills for Glaze, Frit, Enamel, Glass, Feldspar, Flint, Colors, etc.

Eighteen different sizes carried in stock ready to ship all the time.

The only firm that has made improvements on these mills in the past ten years.

Write for our 80-page catalog today.

See our "Ad" next month.

ABBÈ ENGINEERING COMPANY
12th Floor --- 222 Broadway
NEW YORK CITY

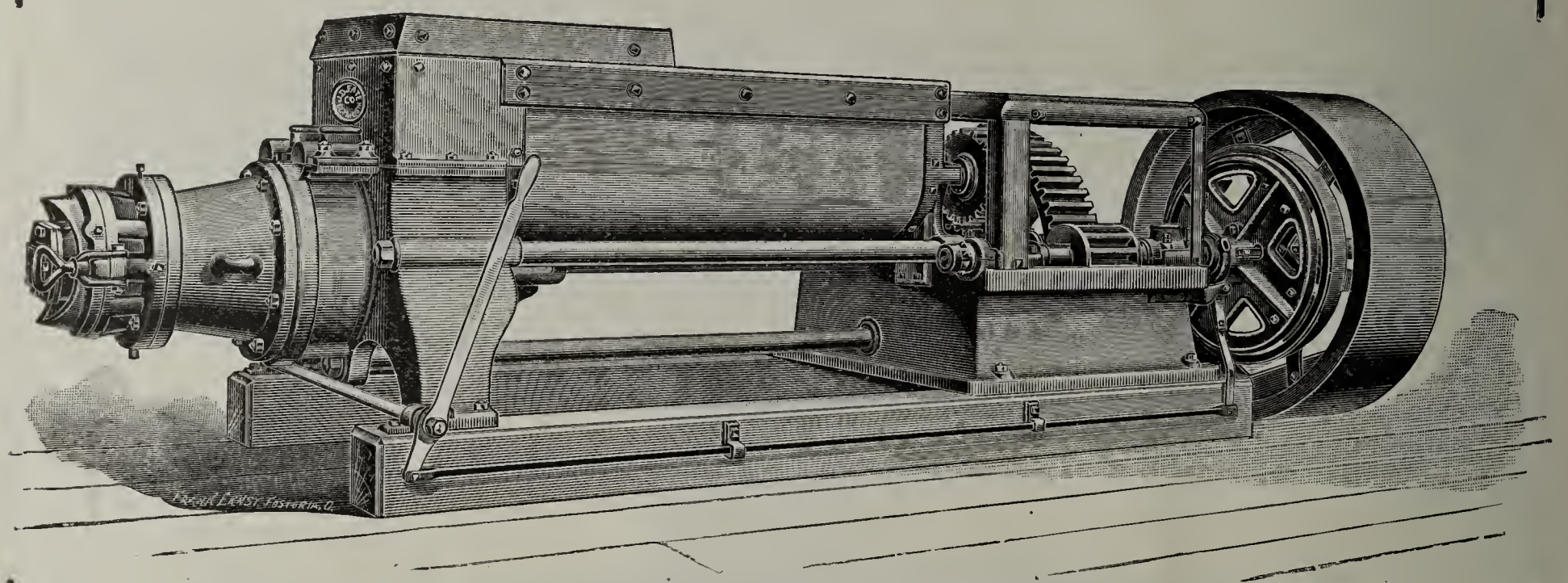
We have a complete testing
labaratory at your service

THE "PREMIER"

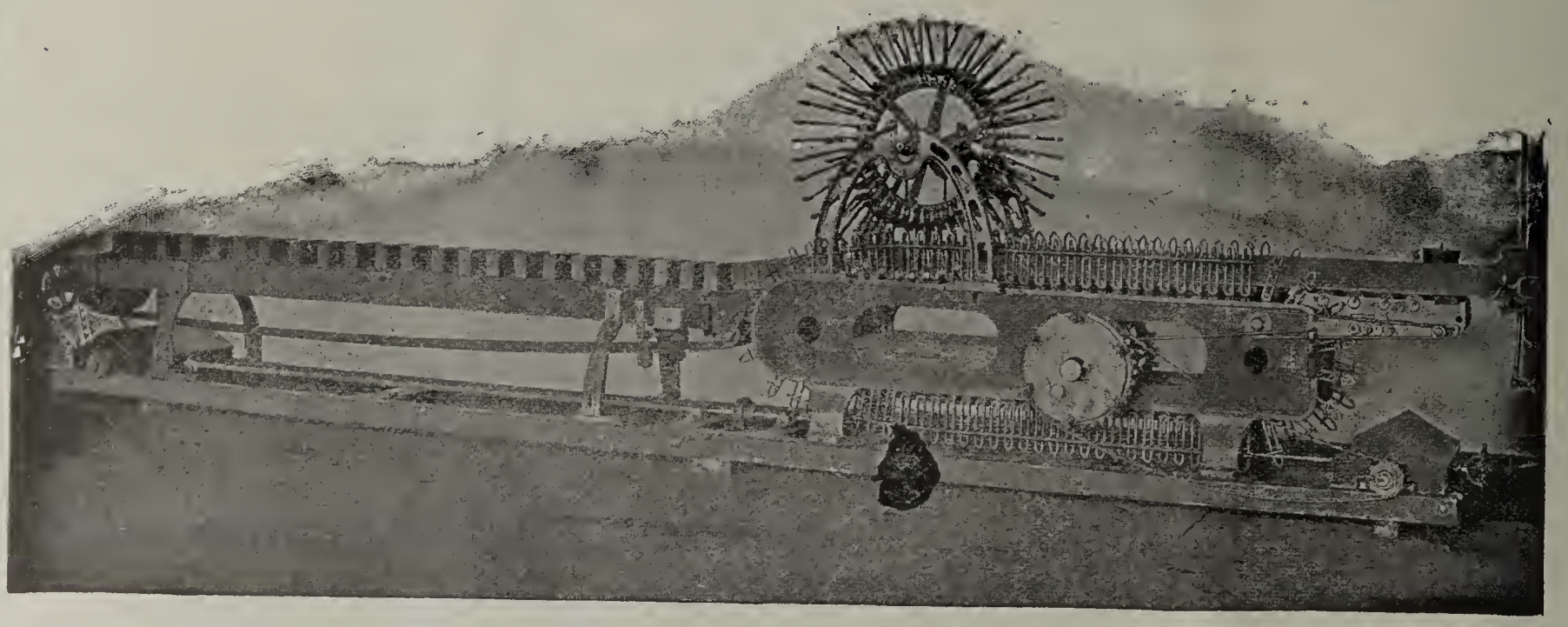
Combined Brick Machine

THE PREMIER LINE — THE J. D. FATE COMPANY

THE LARGEST LINE OF AUTOMATIC CUTTING TABLES IN THE WORLD



WITH BENSING'S AUTOMATIC SIDE-CUT BRICK TABLE.



Make a combination of Brick Machinery which is pronounced by practical brick makers to be the most perfect arrangement of stiff mud machinery now on the market.

It is unequaled for strength, durability, capacity and quality of ware produced.

Write us for catalog and full particulars of the "Premier" line of Clay Working Machinery.

THE J. D. FATE CO., = Plymouth, Ohio

WESTERN REPRESENTATIVES:

B. E. LA DOW, 701 Dwight Bldg., Kansas City, Mo.

Pacific Coast: LEW THORNE, Grand Hotel, San Francisco, Cal.

CLAY RECORD.

Vol. XXVII. No. 9. CHICAGO, NOVEMBER 15, 1905. Semi-Monthly, $1.00 per Year
Single Copies, - 10 Cents

A NEW SYSTEM OF HANDLING, DRYING AND LOADING BRICK AT KNOXVILLE.

There are three kinds of brick made, or rather three methods of making brick. They are known as the dry-press process, soft-mud process, and stiff-mud process; 75 per cent of the brick manufactured are made by the stiff-mud process, and each year shows a larger percentage of stiff-mud brick. There are many different machines for forming clay into green bricks for the stiff-mud process, we will only treat the manufacture of stiff-mud brick, after the green brick leave the machine, the great saving with our process is handling and drying the brick.

1—The handling and drying is the most expensive and most important part of brick making. We will first describe the most modern plants, and their methods of handling and drying their green brick. After the clay has been shaped into bricks they are taken from the off-bearing belt, and hacked on small iron cars, about 500 to 600 brick to each car, this car is then run into an artificial dryer, which is a fire proof building partitioned off into tunnels with one or more tracks in each tunnel to hold up, and carry the cars of brick, these brick are dried in most part from the waste heat from the kilns, this heat is drawn from the kilns through an underground duct, or small tunnels by a large fan and forced through small ducts running underneath the tracks and cars in the dryer, there being small openings in the arch of the ducts to allow the hot air to pass up, and come in contact with the brick to be dried. After they become dry enough to set in the kilns each car in its turn is run into the kiln and here the brick are tossed to the brick setters. The brick are generally set from 35 to 45 high, and the upper courses, or layers are often handled by two men, or tossers before they reach the setters, or the men who place, or set them for burning.

A plant turning out 50,000 brick per day would require approximately the following men in handling the brick from the machine and settling in kilns ready for burning. Three men to place brick on cars, two men to handle cars to dryer, one man to keep cars pushed to hot end of dryer, pull the dry cars out, and look after the dryer and drying, two men to handle cars to kiln, four tossers, two setters, and one man to return empty cars to machine. Total number of men engaged in handling brick from machine and setting them in kilns ready to burn—FIFTEEN—there are few yards, if any that does not use more men then mentioned above.

With our system instead of removing the brick from the

Alex A. Scott, Knoxville, Tenn.

off-bearing belt, and placing them on cars, they remain on the belt, which is extended in front of all the kilns. From

this belt there is a belt in an adjustable frame that runs at right angles, into the kiln where brick are to be dried and burnt. The right angle, or kiln belt is suspended from the kiln arch, if it be a down draft kiln, or from the roof if it be an updraft kiln. This belt is first suspended in the center, and about four feet from the floor of the kiln, and extends the extreme length of the kiln. The brick travel out on the main belt and are then removed to the kiln belt, from this belt they are taken by the setters and placed for drying and burning.

They are set from six to ten high over the entire surface of the kiln, with the exception of a small space in center of the kiln, which is preferable, but not necessary. Said space is directly over the hot air duct, or tunnel that is built under the kiln, with openings up through into the space above referred to. After the first eight or ten courses of brick are placed over the ntire surface of the kiln we place a layer of sheet metal over the entire surface of the wet brick, except on each side where we wish the vapor to escape.

The underground duct has a series of openings that connect the duct with the green brick, or the space formed in the green brick. The hot air is driven through the underground duct up through the space, where it comes in contact with the sheet metal, or cover, and spreads each way, to the right and left, passing through the top courses or wet brick, if your clay is tender while the first eight or ten courses of green brick are being dried in one kiln, or apartment of kiln the setting goes on in the next, one day brick are set in one kiln, the next day in another, setting brick sufficiently high, or as many layers as would make a day's run, most clays will stand comparatively quick drying, and it is only necessary to use one kiln. It is not necessary that the top courses, or last day's run be perfectly dry, but only dry enough to hold up the next day's run of eight or ten courses, as the drying air must pass through all the bottom courses of brick until the kiln is finished, this insures a perfectly dry kiln of brick, and the drying is progressive.

The belt, or conveyor, is elevated each day to a sufficient height to set the day's run under the conveyor. As the green brick are set the galvanized sheet metal, which is on the dry, or comparatively dry brick, and which the setters stand on while setting is removed from the dry brick, and placed on the wet brick.

In actual operation we find it requires the following men: In handling 50,000 brick per 10 hours, from the machine and setting them in kilns ready for burning, including all labor of handling and drying the brick.

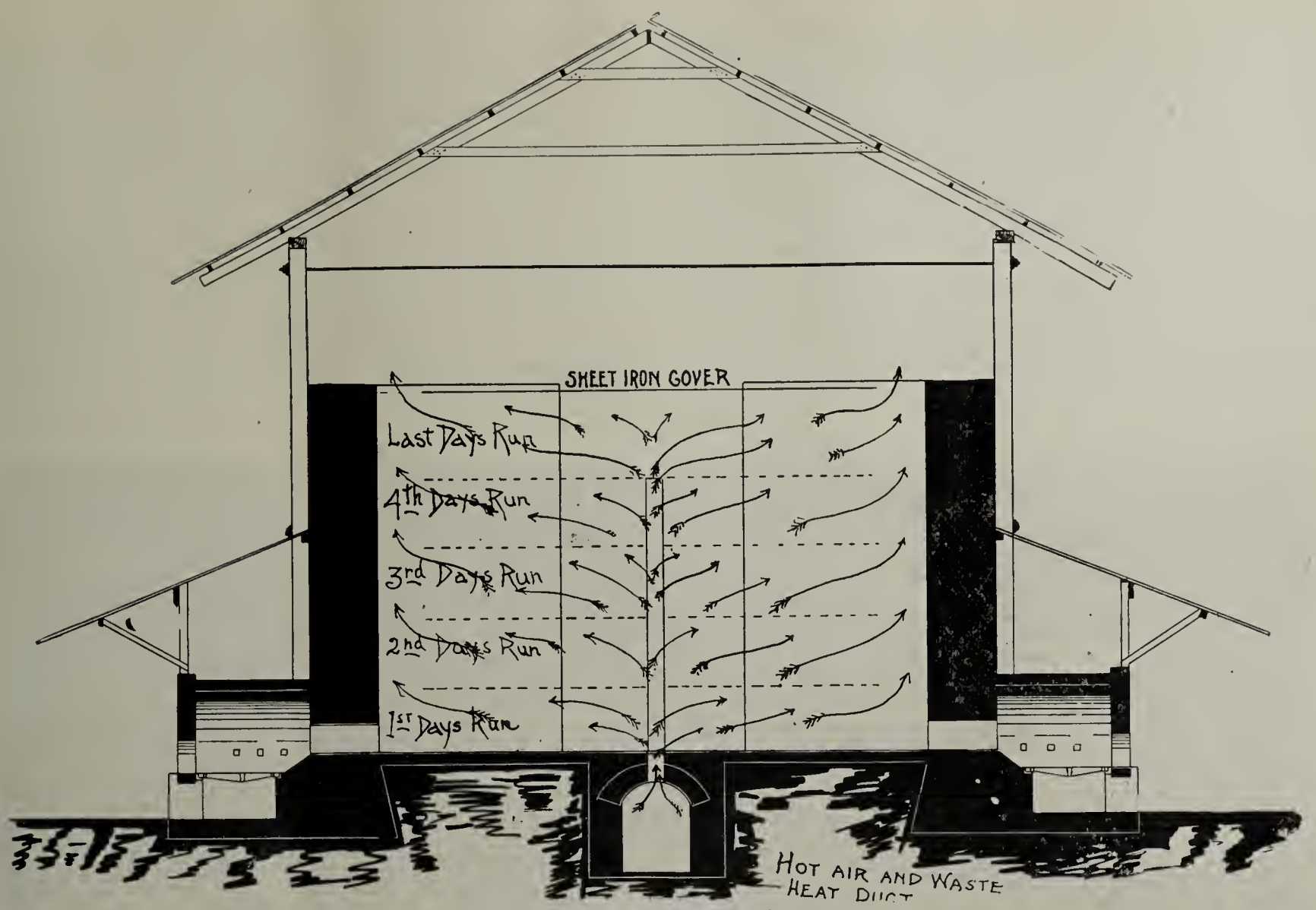
One man changing brick from main to kiln belt.

Three brick setters.

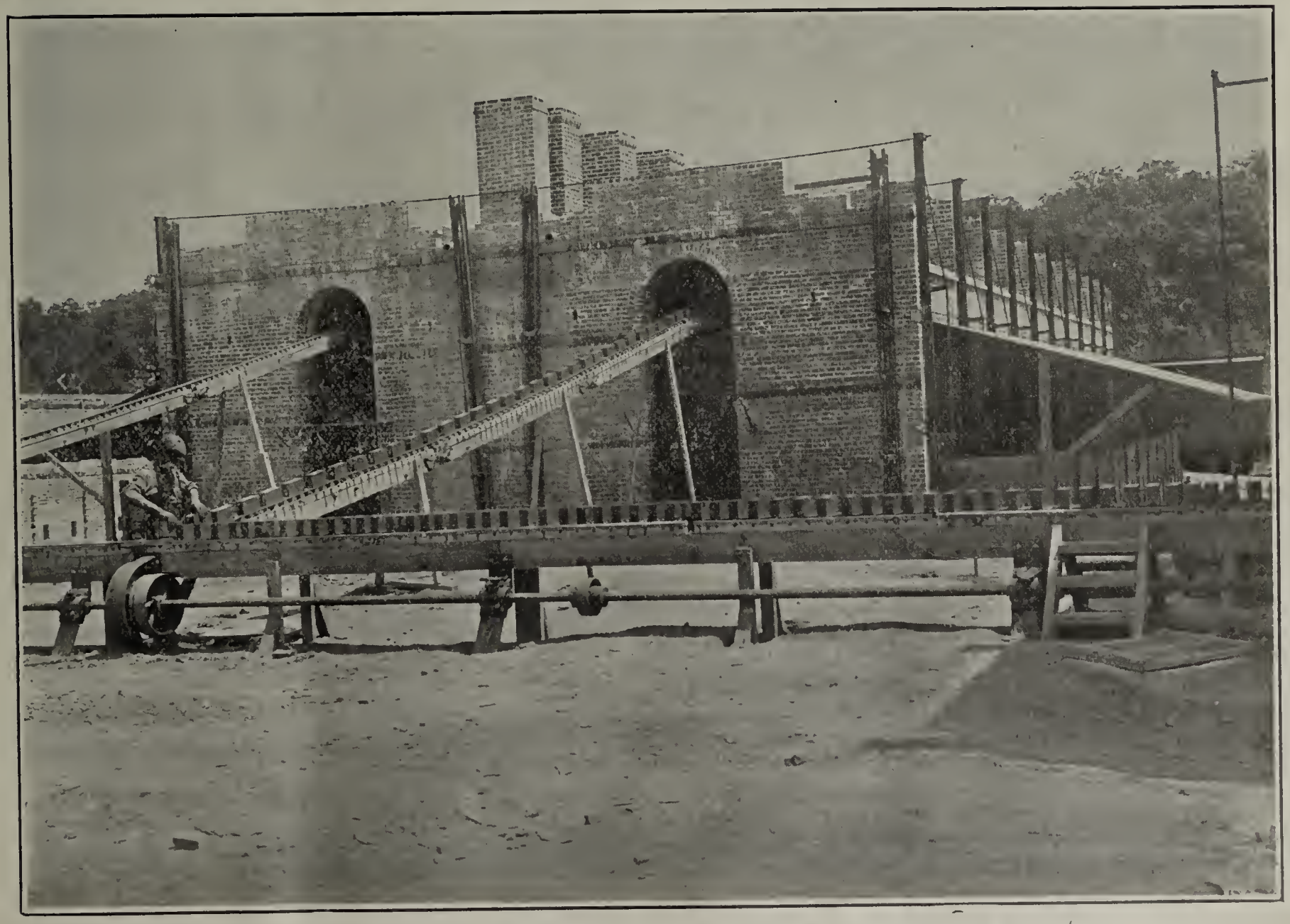
Total number of men engaged in handling 50,000 brick from machine and setting them in kilns ready to burn—FOUR—against—FIFTEEN—used in the most modern plants of the day, a saving of—ELEVEN—men, or over 70 per cent of the cost of handling the brick after they leave the machine, figure what you pay eleven men, figure it for one year, and then for ten years, with interest on money saved.

Now this is not the only labor saved, we use the same kind of kiln belt in loading our burned brick on railroad cars, after the kiln is burned we open the wickets at each,

View of the Plant of Alex A. Scott Brick Co.



Cross Section of Brick Kiln.



Transferring Brick to Kiln Belts from the Main Belt.

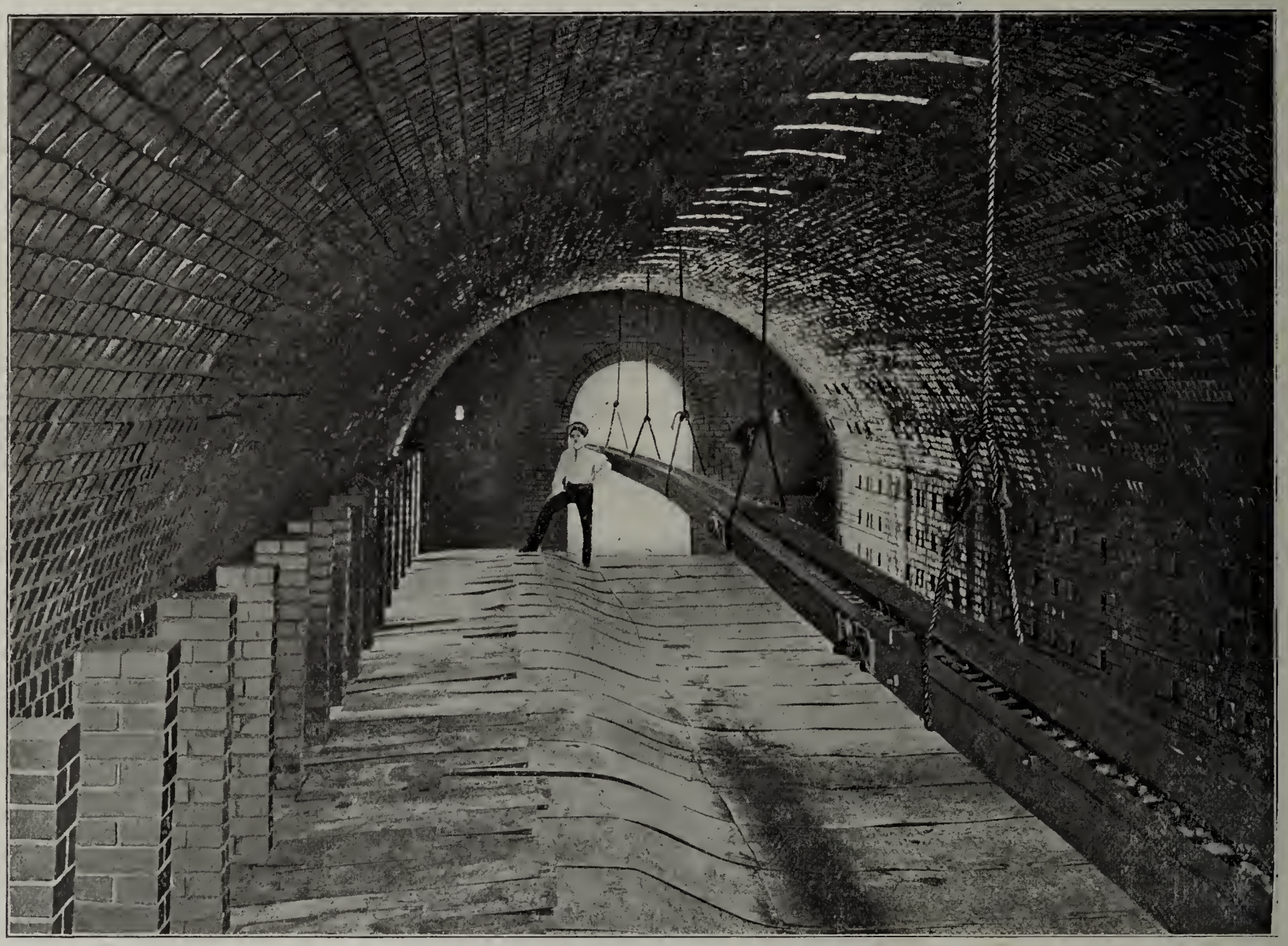
there being an opening or space between the burned brick and the kiln crown, if it is down-draft kiln, the same space that the belt occupied when used in conveying the wet brick to the setters, we again place the belt in the same place and in the same manner as used for green brick, be it an up-draft, or down-draft kiln, only we put on an additional section of frame and rollers, in order that the belt will extend through and outside the kiln and into or over the R. R. car; the brick are then placed on the belt and unloaded with the same ease as they are conveyed in the kiln, reducing the cost of loading brick in cars more than 50 per cent over the wheelbarrow, or car practice, which is generally used.

With this system we use, for drying and water-smoking, the waste and burning heat from our kilns, also our exhaust and waste steam in drying when we start, and before we have heat from kilns. There is not a single advantage that any other system has over this system, and there is many and every advantage this system has over all others.

We recommend the use of square kilns, either up, or down-draft, the system being equally well adapted to either.

Where there is no permanent kiln, this system will handle and dry the brick perfectly; it is only necessary to install blower, and heating apparatus, erect the conveyor and build the underground ducts, and build an old-fashioned kiln over these ducts, plastering the outside of the kilns with mud, as is the old custom. This is especially desirable where new plants are being built, as the brick can be made to build permanent kilns. Our extra large duct under the kiln for conveying hot air, and the brick conveyor is the only cost that we have that the modern waste heat plants of to-day do not have, and the cars alone used in a waste heat dryer will more than offset these two items, so the entire cost of a fireproof building, stack, castings, etc., used in an artificial dryer, is absolutely saved, also the depreciation, interest and repairs on your dryer, cars, tracks, etc.

No one knows better than the practical brickmaker the great source of annoyance and expense attached to an artificial dryer, and car system, no matter how modern and complete it may be, the cost of keeping in repair the cars and building, etc., is quite an item. Each time you handle a brick, you not only take from your profits, but from the quality of the brick, especially so in handling dry brick. With our system, brick are set in kilns as perfect as they come from the machine; again, in drying brick on cars, they often warp, or twist, in drying, because the outside brick dry first on one side, and it then becomes a warped, burned brick, or a broken brick. Not so with brick dried in kilns, as all the brick are subjected to the same drying elements, and the brick must remain in the same shape when dried. Where brick are dried on cars there are many units of heat lost by the hot air passing around and over the cars, and not coming in contact with the brick. You will readily see the advantage in confining all of the hot air, or warm air, to the material to be dried.



The Kiln Belt near botton of Kiln.

The brick are not disfigured, as they are never handled in their dry state, when practically all of the damage by handling is done to brick.

This system takes less room, there are no wrecks, as must occur with a car system, no bumping together of cars and spilling of brick, no dryer building to keep in repair, the brick cannot warp in drying, as the drying is uniform. The wear and tear and maintenance of the conveyors is not 10

per cent compared to that of an artificial dryer, cars, etc. Men cannot shirk their duty in any way, when the machinery is running, everything is running and behind steam, every man must be busy, and must deliver the goods. The chances of stops and delays are much fewer, as everything is simple and works easy. The belts will last for years, as they are never in a strain.

While the above advantages mean a big thing to the brick-makers, and can be appreciated by no one else, as by a practical brick man, the greatest advantage is in the saving of labor, which would be, in a fifty-thousand capacity plant, such as we are figuring on, at least eleven men, and in most cases more. These men do the most laborious work, as they move the brick in cars, toss them to setters, return empty cars, etc. Brick tossing is considered the hardest work around a brick plant; tossers are well paid, and the most difficult labor to keep.

Any clay that can be dried in an artificial dryer can be dried in the kilns by our process; you cannot realize the many advantages and great saving in placing brick direct from the machine into kilns, in the same order that they are set for burning, and again unloading same on a belt, until you see it, and figure for yourself.

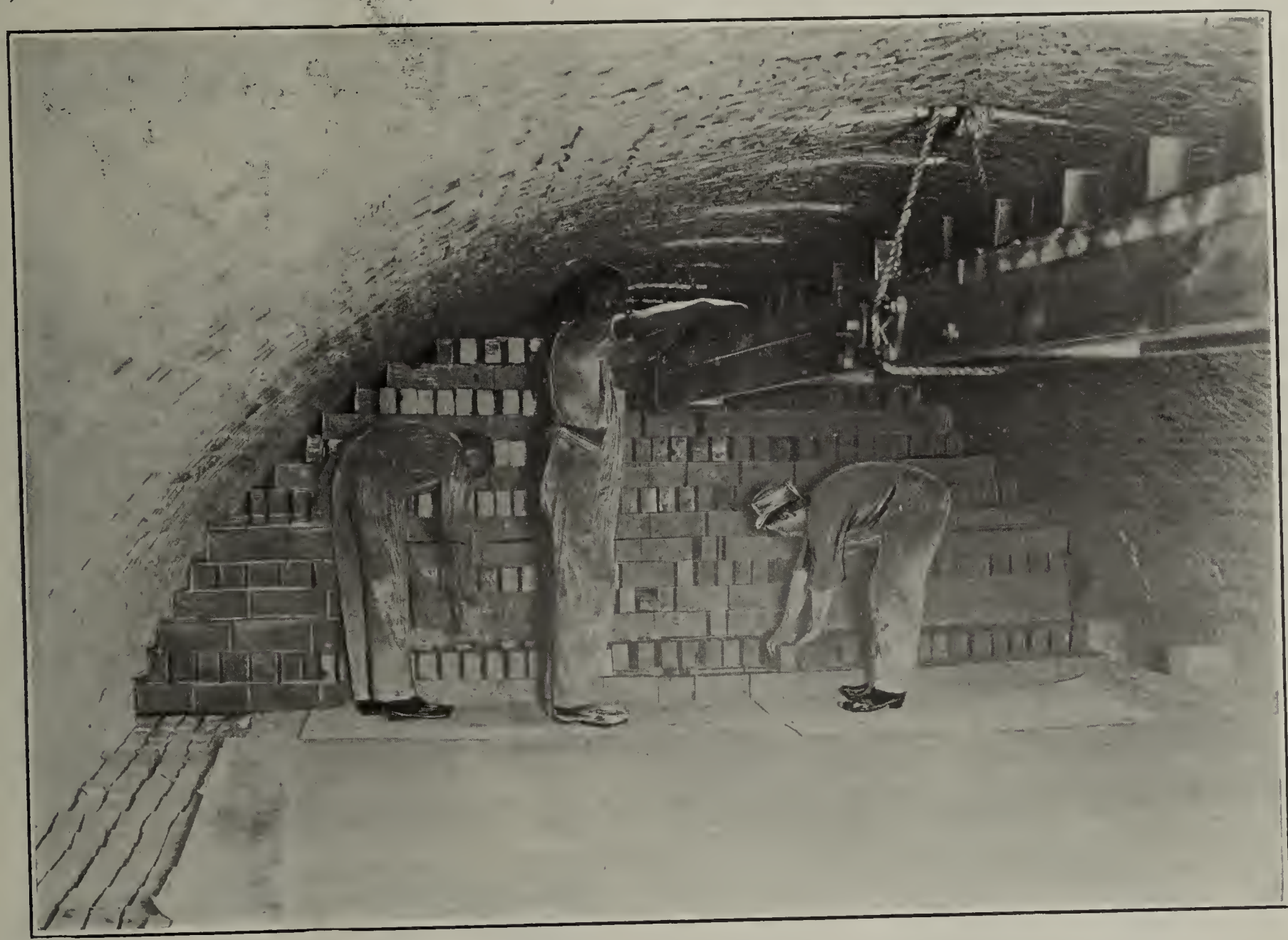
Waste heat is used in drying with either up, or down-draft kilns, and brick are dried for from three to six cents per thousand. We are ready and anxious to prove every claim made.

This system is fully covered with patents, both in the U. S. and foreign countries; not only are we protected by mechanical patents, but also by process patents, in which the process was recognized by the patent office as being an entirely new art, and every claim was allowed without a single reference.

There is absolutely no question but that this method will revolutionize the brick industry. If we were to tell you just what is being done with this system on the Alex. A. Scott Brick Co's. plant, at Knoxville, Tenn., you would probably discredit it.

Alex. A. Scott, of Knoxville, Tenn., is the patentee of this system. Mr. Scott is a wonderful man in this line of work, as he has brought out several other devices and improvements to the old style of handling brick at the plants.

While he is still a young man he has been in the brick manufacturing business for 18 years, practically all his life, with the exception of five years, when he was in the west in the mining business.



The Kiln Belt at the top of Kiln.

He was the first to put on the market an elevating and lowering brick car, but he abandoned it for this new system. He built a new plant, at a cost of $85,000, to demonstrate that there is but one way to handle and dry brick.

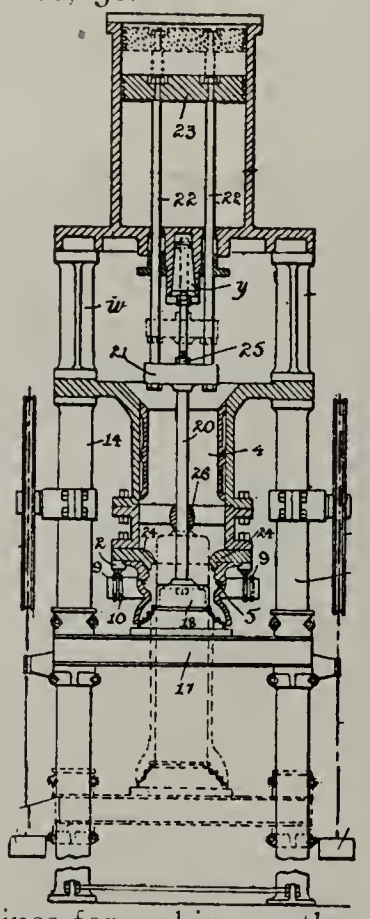
The largest manufacturers of brick, and experts, have visited this plant. They have nothing but praise to say, both of the plant and the system. Besides owning this plant, Mr. Scott has a one-half interest in the brick plant of J. F. Scott & Son, at which plant are made 40,000 brick daily. The plant has been operated for 20 years.

The South River (N. J.) Clay & Sand Co., registered office 1 Exchange Place, Jersey City, N. J., has been incorporated with $1,000,000 capital stock. Incorporators: Joseph D. Bidle, Matthew C. Jenkins, and J. Fraser Reid, of Newark.

NEW INVENTIONS THAT ARE OF INTEREST TO THE CLAY MANUFACTURER.

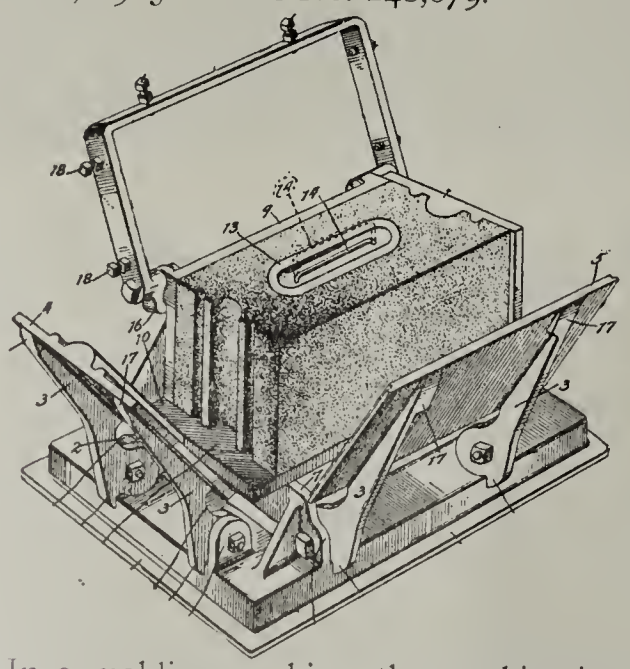
These new inventions are those that are especially of interest to any one engaged in the line of building materials and their manufacture, or machinery to make them.

799,833. Machine for making earthenware pipe. Heman Coulthurst, Jeshurun Coulthurst, Armena Coulthurst, Darwen and Matthew Yarrow and Walter R. Haworth, Bolton, England, assignors to Yarrow and Company (Bolton) Limited, Bolton, England, an English Company. Filed May 13, 1905. Serial No. 260,238.



Claim. In machines for making earthenware pipes, a clay-pressing piston, means for operating same, a cylinder for said piston to operate within, a core for forming the interior opening through the pipe being made, bearings for said core arranged to allow a vertical movement to be transmitted to said core, means for transmitting said movement and means for forming or shaping the outer surface of the pipe being made, substantially as herein specified.

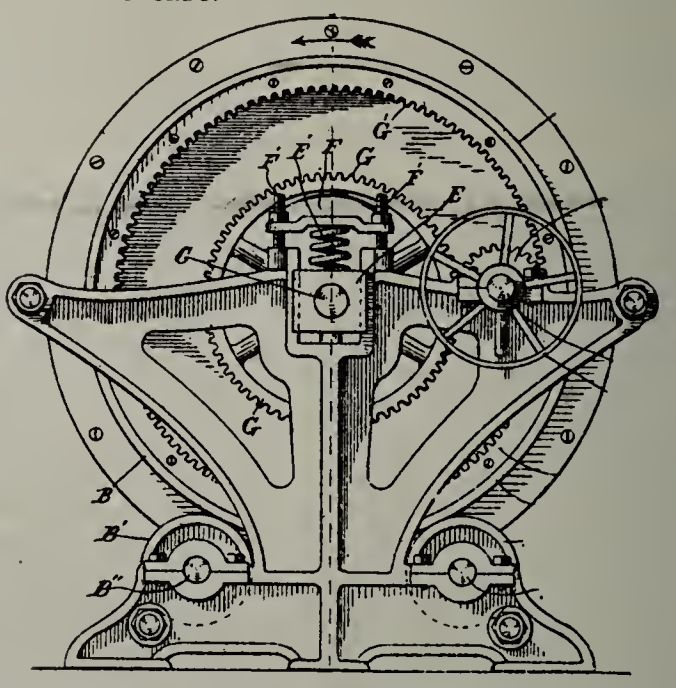
799,871. Molding-Machine. Phillip Savard, Chicago, Ill., assignor of one-half to Robert C. W. Timm, Chicago, Ill. Filed March 6, 1905. Serial No. 248,679.



Claim—In a molding-machine, the combination with the machine-frame and means for supporting the material to be molded, of a plurality of walls at least three of which are pivoted to the machine-frame; and a binder pivoted to a fixed portion of the machine and adapted to simultaneously engage all of the pivoted walls for forcing the same toward each other upon the material to be molded.

799,990. Pulverizer. George S. Knapp, Grand Rapids, Mich., assignor of one-half to Frank B. Chapin, Grand Rapids, Mich. Filed Oct. 15, 1903. Serial No. 177,123.

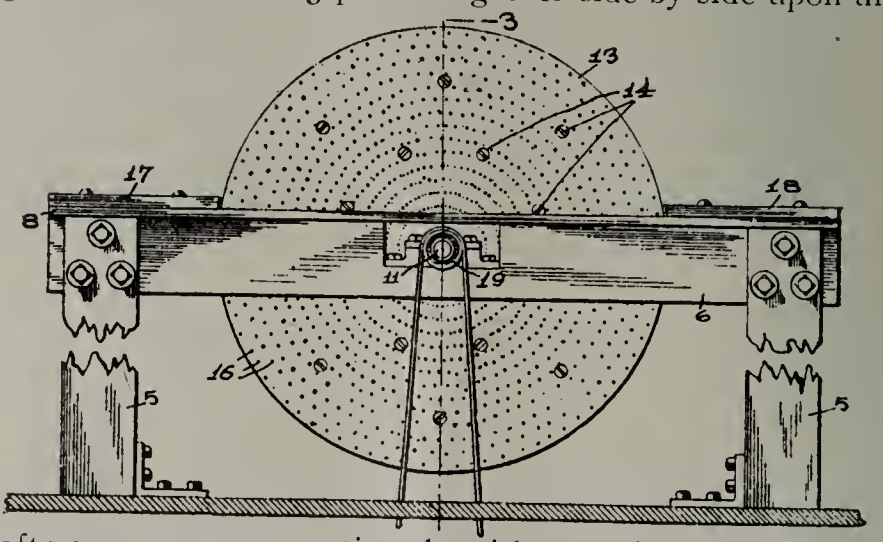
Claim—The combination of a rotative case, means for passing material longitudinally through the case, a large roll near the axis of the case and movable vertically, and a series of smaller rolls surrounding the large roll and radially movable relative thereto, all of said rolls being supported by the lower side of the case.



A rotative case, means for passing material longitudinally through the case, a vertically-movable shaft near the axis of the case, a roll mounted on the shaft and of less diameter than the interior of the case, and a series of rolls between said roll and the case and vertically movable therein, all of said rolls being supported by the lower side of the interior of the case.

800,465. Machine for cleaning old brick. Joseph M. Moroney and Albert E. McCarthy, St. Louis, Mo. Filed July 1, 1904. Serial No. 214,997.

Claim—In a machine for cleaning old brick; the platform 8 having a central opening 9; a cleaning-wheel mounted in the central opening, and the guides 17 and 18 upon the platform in line with the cleaning-wheel; said cleaning-wheel comprising the disks 12 and 13 placed together side by side upon the



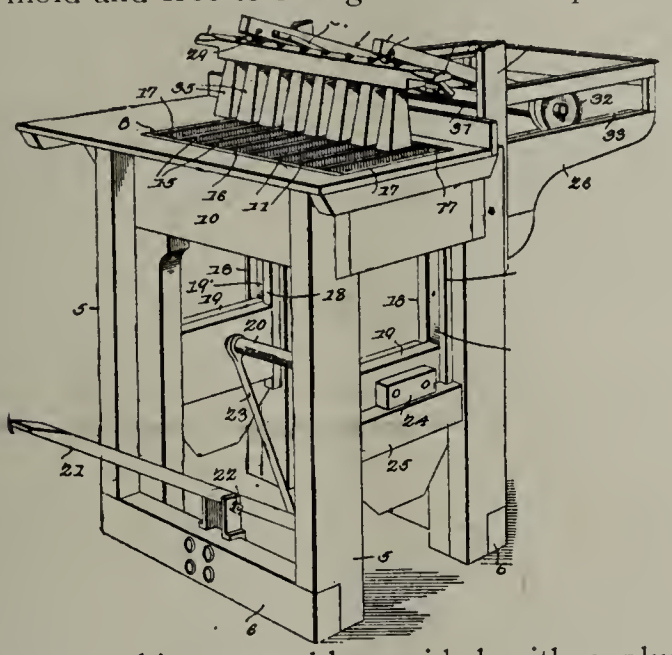
shaft; cap-screws connecting the disks together, and the nails 16 inserted outwardly through the disks; the heads of said nails being countersunk into the inner faces of the disks, and the points of said nails extending slightly beyond the lines of the sides of the guides 17 and 18.

800,110. Plastic Composition. John W. Ivery, Dillsburg, Pa., filed April 17, 1905. Serial No. 256,039.

Claim—A plastic composition for producing molded and baked or annealed articles, consisting of approximately two hundred pounds of granulated rock, one pound of molasses, and fifteen pounds of water, substantially as described.

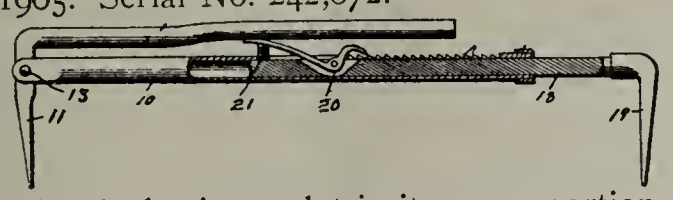
800,500. Brick-molding machine. Levi Shell, Sibley, Iowa. Filed July 25, 1904. Serial No. 218,080.

Claim—In a brick-machine, the combination with a frame, of a mold, and a tamping element movable laterally to and from the mold and free to swing in a vertical plane.



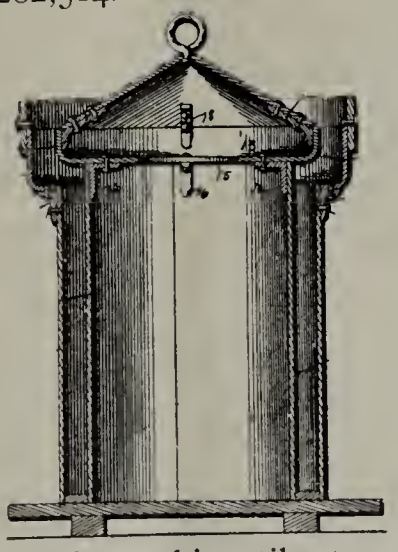
In a brick-machine, a mold provided with a plurality of molding chambers or compartments, a tamping-carriage movable in a substantially horizontal plane to and from the mold, and a tamping element pivoted to the carriage and capable of free swinging movement in a vertical plane.

800,341. Brick-tongs. Vane R. Tift, Pilger, Neb. Filed Jan. 21, 1905. Serial No. 242,072.



Claim—A tube having a slot in its upper portion, ratchets forming the edges of the slot, a jaw pivoted to the tube, a handle attached to the jaw and extending over the tube to a position above the ratchets, a bar slidingly mounted in the tube, a jaw attached to the outer end of said bar and means designed to engage the ratchets for securing the bar against outward movement relative to the tube.

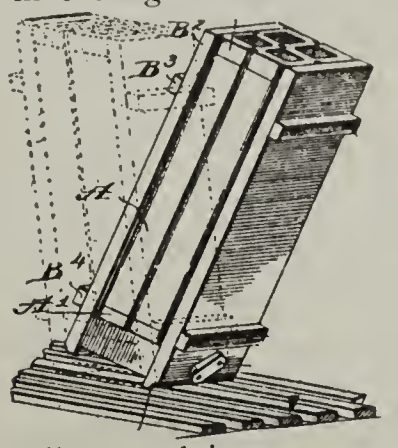
800,221. Mold for making tile. Charles S. Larimer, Sac City, Iowa, assignor to The Cement Tile and Tile Mold Manufacturing Company, Sac City, Iowa. Filed May 26, 1905. Serial No. 262,514.



Claim—In a mold for making tile, two concentric cylinders and the inner cylinder extended above the top of the outer cylinder, a disk of larger diameter than the inner cylinder provided with a central opening and an upturned flange at its circumference and angle-irons fixed to its bottom, a detachable cone-shaped cover fitted to the flange of the disk, a hopper larger in diameter than the outer cylinder fixed to the top of the outer cylinder and a band clamped to the top and outside of the hopper.

800,242. Method of handling plastic hollow ware. Orla C. Pixley, Des Moines, Ia Filed Fct. 30, 1902 Serial No. 129,480.

Claim—The process of preparing sections of conduit for drying, consisting in cutting off one end of the section to



form a protecting-collar; applying pressure to the sides of said section and said collar to prevent distortion while undergoing a change of position, and supporting said section in a vertical position upon its protecting-collar so that said section and said collar shall be free to shrink transversely as they dry.

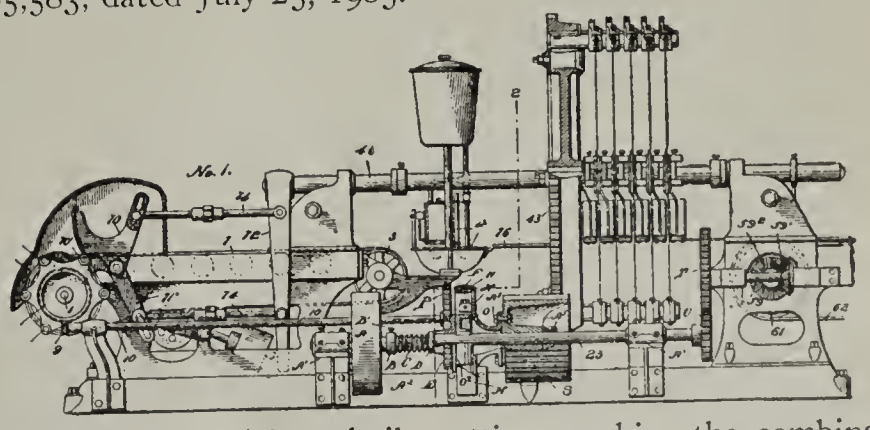
800,635. Process of Treating Lime. Carleton Ellis, Boston, Mass. Filed July 13, 1903. Serial No. 165,363.

Claim—A process for producing dry hydrate of lime which consists in saturating at one point a stream of quicklime with a stream of water sufficient in quantity to completely hydrate the lime, and impelling the stream of mingled lime and water away from the mingling-point for the purpose of allowing hydration to take place.

A process for producing dry hydrate of lime which consists in mingling before any substantial hydration takes place a stream of quicklime with enough water to complete its hydration, carrying the saturated lime in the form of progressing stream away from the point of mingling, and completing the hydration and drying of said stream without further addition of water.

A process for producing dry hydrate of lime which consists in causing quicklime to progress in the form of a stream, adding to said stream at one point the amount of water necessary to its complete hydration to a dry powder, and conduct the hydration and drying of said stream at different points succeeding the point of mingling with water.

12,392. Brick or tile cutting machine. William R. Cunningham, Bucyrus, O., assignor to The American Clay Machinery Company, Bucyrus, Ohio, a corporation of New Jersey. Filed Aug. 17, 1905. Serial No. 274,637. Original No. 795,583, dated July 25, 1905.



Claim—In a brick and tile cutting machine the combination of clay-measuring mechanism, clay-cutting mechanism, and a governing mechanism for causing the cutting devices to continuously revolve in register with and by the travel of the bar of clay said governing mechanism comprising a fixed drive-friction and a loose friction operable together in the same direction, and said lose friction yieldable relative to the drive-friction under the variations of the travel of the bar of clay.

BRICK AGAINST WOOD.

In noting the many beautiful residences built in Bloomington the past season, one is impressed with the fact that brick appears to be growing in favor as material for construction. Wood still prevails, but the continually increasing price of good lumber has narrowed the margin of cost between that and brick until it has almost disappeared. If the price of clear white pine should continue to advance, it may soon be true, if it is not now true, that a house can be put up as cheaply with brick as with such high-grade lumber as went into frame buildings twenty-five years ago and ought to go into them today. The substitutes offered for white pine are for the most part unsatisfactory and if thoroughly first-class work is to be done the choice must be made between good pine and brick.

It must appear to everyone that when this choice involves little or no difference in the matter of cost the decision must be in favor of the brick structure. It is solid, pleasing in appearance, substantial and gives the impression that it is proof against decay and what is more important, practically proof against conflagration—or at least a great improvement on lumber. After all the costly frame structure is completed, oiled, decorated, painted and finished, touch a match to it and unless the fire department responds promptly all is gone. It is such considerations that have turned an increasing number to the use of brick.

There is at least one beautiful residence nearing completion in Bloomington made of stone, dressed, in the city. Others have adopted a substitute for brick known as concrete, which it is claimed makes a solid and enduring wall. Others still have put a fine brick veneering over a wooden framework with excellent effect to the eye and with good results in every other way.

These methods all indicate the change that is going on in construction to accommodate itself to the decimation of the northern pine forests. As one great resource of nature is being exhausted we must fall back on another. And we must admit that in the clay which makes the brick and the quarries that produce the stone and in the materials that go into the concrete the supply is practically inexhaustable.

We have already reached the iron and steel age in bridge and car construction, and the age of brick and steel in the construction of hotels and great business blocks and we may be from the force of circumstances approaching the brick age in residence construction.

One most satisfactory feature of the case thus presented is that it promises for our own city, for example, the further development of an important industry right at home. In that case the builder would not be left to the caprice of the lumber trust which has control of the little remnant of our native pine. Lumber would form but a trifling cost of construction and his money would go to encourage the capital and patronize the labor employed in making brick in our home yards. The encouragement thus given to the industry would tend to improve the quality of the material turned out until we could eventually supply the finishing brick as well as the commoner kinds. The money that would go to home industries in a single year in this way—even if we had to import the finer quality of brick for the outer work—would give a surprising impetus to all branches of business in the city.

With the price of white pine going out of sight and with an abundance of more substantial material at our doors which can be used to the improved appearance and greater safety of the city, we seem indeed to be nearing the end of the wooden age of construction in residences as well as business buildings.

Editor CLAY RECORD.

Chicago, Ill.

I am enclosing a clipping from the Daily Pantagraph published in this city. This clipping is purely an editorial and its title is "Brick Against Wood." Coming as it does from an editorial in the strongest and best edited paper in the state outside of Chicago and purely from the heart of the editor, I consider it a good strong article and no doubt will be of interest to the readers of the CLAY RECORD. But I would add to this on my own responsibility ("What is the use of manufacturing more brick when there are not brick layers enough to lay up what is already made. At the present rate of apprentices, who are learning the brick layers' trade, it will be but a few years until a journeyman brick layer will be a curiosity. It might be well for the National Brick Manufacturers' Association to take up the question of a Brick-Layers' School, so that our laborers will not be hampered entirely by a few dictators of the National Brick Layers' Union.") If this article from the paper and also what I have added will be of any service to you, I shall be pleased to have you print them.

O. W. DUNLOP, Bloomington, Ill.

NEARLY 100 BOAT LOADS OF HUDSON RIVER PRODUCT SOLD LAST WEEK.

Ninety-eight barge loads of Hudson River common brick were sold in the New York wholesale market last week and this is very near the average number per week that has been handled this fall, and is a quantity far exceeding what the trade has until this year been accustomed to, though it probably does not equal the utmost manufacturing and shipping capacity of the yards.

Certainty that values will not fall to a low level, and that nothing is to be gained by haste, have led manufacturers into a mood and line of thought full of confidence that prosperity cannot now desert them, and that bonanza prices will be realized by their product whenever they choose to market it.

While it cannot be said that they are straining every nerve to send material down, they are in their own opinion shipping quite enough for current needs. The top price has now reached the nine-dollar mark after steadily mounting higher each successive week since that "unaccountable" reaction in midsummer, and probabilities are shaping for ten-dollar brick not many weeks away.

The highest wholesale mark touched last winter was $10 per M., but here we are paying nine dollars in November. As to the corresponding date last year prices for good brick ranged from $7.37½ to $7.62½ only, it seems an anticipation very moderate to look for an eleven-dollar article next February.

Builders complain, but they continue to pay the price, and put it on the next fellow.—Record and Guide.

BUILDING OPERATIONS FOR OCTOBER.

Reports received by The American Contractor, Chicago, from the leading cities of the country show a general continuance of the decided prosperity that has attended the building trades during the past season. In some of the larger cities, notably New York, there has been a falling off in the value of building permits issued, as compared with last month, but this is almost necessarily incident to the season of the year that does not permit of great activity. As compared with the reports of the corresponding month of 1904, the following figures show the percentage of gain: New York, 19; Chicago, 5; Baltimore, 38; Cleveland, 45; Cincinnati, 81; Columbus, O., 43; Dallas, 219; Denver, 89; Des Moines, 50; Detroit, 25; Duluth, 119; Hartford, 46; Indianapolis, 33; Jersey City, 30; Knoxville, Tenn., 167; Louisville, 75; Milwaukee, 27; Minneapolis, 68; Mobile, 210; New Haven, 426; Newark, 160; Omaha, 231; St. Louis, 10; San Francisco, 6; Spokane, 170; Salt Lake City, 19; Toledo, 38; Wilmington, Del., 187; Wilkesbarre, Pa., 84. A loss is noted in some cities, but their number is but slightly greater than last month. The loss in Buffalo is 20 per cent; in Davenport, 43; Kansas City, Mo., 30; Nashville, 37; Philadelphia, 7; Pittsburg, 4; Washington, D. C., 10; Worcester, Mass., 21; Winnipeg, Man., 62. Taken altogether, these reports are decidedly encouraging and show that prosperity is widely distributed and indicates most healthful general conditions. Not in many years has the building outlook been brighter at this season of the year.

City	Oct., 1905, cost.	Oct., 1904, cost.	Gain per cent.	Loss per cent.
Atlanta, Ga.	266,557	292,769	....	9
Allegheny, Pa.	209,525	252,130	....	17
Baltimore, Md.	2,345,000	1,699,000	38	..
Bridgeport, Conn.	418,633	324,219	29	..
Buffalo, N. Y.	756,697	954,152	....	20
Chicago, Ill.	4,918,155	4,703,555	5	..
Cambridge, Mass.	215,100	91,425	14	..
Cleveland, Ohio	1,177,545	811,820	45	..
Cincinnati, O.	1,460,850	804,300	81	..
Columbus, Ohio	370,945	258,960	43	..
Davenport, Iowa	52,820	94,275	....	43
Dallas, Texas	303,879	95,463	219	..
Denver, Colo.	579,985	306,780	89	..
Des Moines, Ia.	163,155	109,391	50	..
Detroit, Mich.	918,150	732,000	25	..
Duluth, Minn.	239,620	109,430	119	..
Grand Rapids, Mich.	224,378	180,477	23	..
Harrisburg, Pa.	56,600	87,275	....	35
Hartford, Conn.	522,205	356,500	46	..
Indianapolis, Ind.	446,693	335,491	33	..
Jersey City, N. J.	444,814	340,643	30	..
Kansas City, Mo.	720,160	1,036,430	....	30
Knoxville, Tenn.	128,775	48,980	167	..
Louisville, Ky.	349,474	199,575	75	..
Los Angeles, Cal.	1,348,556	1,267,860	6	..
Manchester, N. H.	43,268	23,125	87	..
Milwaukee, Wis.	847,822	664,297	27	..
Minneapolis, Minn.	909,665	538,135	68	..
Mobile, Ala.	31,415	10,305	210	..
Nashville, Tenn.	102,097	163,789	....	37
New Haven, Conn.	437,215	83,113	426	..
Newark, N. J.	1,260,191	485,445	160	..
New York				
Manhattan	7,700,790	7,392,500	4	..
Alterations	893,205	480,004	....	..
Brooklyn	6,394,886	3,753,338	70	..
Bronx	1,879,400	2,515,970	....	25
Alterations	66,760	94,175	....	..
Greater New York	16,935,041	14,235,987	19	..
Omaha, Neb.	424,700	128,920	231	..
Philadelphia, Pa.	1,993,200	2,143,785	....	7
Paterson, N. J.	76,378	54,810	40	..
Pittsburg, Pa.	1,427,066	1,494,081	....	4
Portland, Orc.	394,212	.....	....	..
St. Louis, Mo.	1,596,383	1,451,195	10	..
St. Joseph, Mo.	65,745	87,420	....	25
St. Paul, Minn.	417,865	418,250	....	..
San Francisco, Cal.	1,791,636	1,683,706	6	..
Scranton, Pa.	285,604	205,165	39	..
Seattle, Wash.	372,544	371,934	....	..
Spokane, Wash.	507,940	188,928	170	..
South Bend, Ind.	61,415	100,075	....	39
Salt Lake City, Utah	106,445	89,670	19	..
Topeka, Kans.	63,430	58,715	8	..
Toledo, Ohio	253,721	183,775	38	..
Washington, D. C.	610,138	680,645	....	10
Wilmington, Del.	215,367	75,595	187	..
Worcester, Mass.	112,782	142,240	....	21
Wilkesbarre, Pa.	81,170	44,675	84	..
Winnipeg, Man.	398,800	1,056,700	....	62

HARTFORD HAS A BRICK FAMINE.

There is a brick famine on now in Hartford, Ct. It is a rather unusual state of affairs, for brick manufacturers claim in years past they have barely cleared expenses. One Berlin brick manufacturer said last week that he had disposed of over 72,000,000 brick and a glance at some of the brickyards along the line of the railroad will bear out the report of a scarcity of brick.

The famine is accounted for by the extensive building operations now going on, and the nearest point to Hartford from which brick is now being delivered here is Thompsonville. The supply there is not expected to last much longer.

An evidence of the scarcity of brick was the visit of a local real estate man to the office of the building inspector.

He is erecting a brick block and asked permission to use some brick which he had obtained from the buildings at the lower end of State street which are in process of demolition.

He informed the building inspector that he was willing to pay $12 a thousand for brick, but could get none. A year ago there was plenty of brick procurable at $5 a thousand, but this year while the supply lasted the price was $8.

FOR THANKSGIVING DAY.

the Nickel Plate Road will sell tickets, within distance of one hundred and fifty miles, November 29th and 30th, at rate of a fare and a third for the round trip. Return limit December 4th. Three through trains daily to Ft. Wayne, Cleveland, Erie, Buffalo, New York, Boston and New England points. No excess fare charged on any train on the Nickel Plate road. Standard equipment on all trains. Meals served in Nickel Plate dining-cars, on American Club Meal Plan, ranging in price from thirty-five cents to one dollar; also service a la carte and midday luncheon fifty cents. Chicago depot, La Salle and Van Buren Streets, on the Elevated Loop. Telephones Central 2057 and 6172.

CLAY RECORD.

PUBLISHED SEMI-MONTHLY BY THE

CLAY RECORD PUBLISHING COMPANY,

Ninth Floor, Plymouth Building,

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CHICAGO.

GEORGE H. HARTWELL, Editor.

SUBSCRIPTIONS.

Send One Dollar bill or stamps for United States, Canada or Mexico and one dollar fifty cents for all other foreign countries.

Papers are not stopped at the end of subscriptions unless the subscribers order them so and pay up the arrearages.

ENTERED AT THE CHICAGO POST OFFICE AS SECOND-CLASS MATTER.

Vol. XXVII. NOVEMBER 15, 1905. No. 9

"I like to read American advertisements. They are in themselves literature, and I can gauge the prosperity of the country by their very appearance."—William E. Gladstone.

When times are dull and people are not advertising is the very time that advertising should be the heaviest. Ninety-nine out of every hundred merchants advertise most when there is least need of it, instead of looking upon advertising as the panacea for their business ills.—John Wanamaker.

CONVENTIONS.

The twenty-eighth annual meeting of the Illinois Clay Workers' Association will be held in January.

The sixth annual meeting of the Wisconsin Clay Workers' Association will be held at Menominee, date not set.

The twenty-sixth annual meeting of the Iowa Brick & Tile Association will be held in Des Moines, January 10th, 11th and 12th, 1906.

The fourth annual meeting of the Ontario Clay-Workers' Association will be held at Hamilton, Ont., December 13th and 14th. Headquarters will be at the Royal.

The second annual meeting of the National Association of Manufacturers of Sand Lime Products will be held at Detroit, Mich., December 5, 6 and 7, 1905. Headquarters at Hotel Cadillac.

No business can stand still if good advertising is employed to force it ahead.

Get ready to attend your state convention or visit the one held in your neighboring state.

A hero is a man who, after doing his duty, doesn't stand around and wait for people to pat him on the back.

THE CLAY RECORD *is* the only clay journal in America that is printed twice per month. Subscription only one dollar.

A given appropriation spent in spasmodic advertising can never bring results as good as those obtained from the same amount spent in continuous advertising.

Every brick plant each year has its losses, caused by unavoidable and inevitable wear and tear, to charge up to the depreciation account, and is compelled also to make an appropriation for replacements, all of which comes out of the profits, reducing the net earnings by as much, all of which is bad enough; but losses coming from other sources, which are altogether too common, are in our judgment entirely without justification. We have in mind losses resulting from fires in and around the brick plant. One can hardly believe the statistics bearing on this point, and the total amount is something enormous. And what is more to the point and difficult to understand is that, almost the total amount of losses originated in the carelessness of those in charge; where if common sense and ordinary care had been exercised it would have been different. Now we cannot refrain from cautioning our friends on this subject, at the same time appealing to them that, as winter is coming on and the season is at hand when danger from fire is greater, they should bestir themselves and inaugurate such discipline and enforce it so that the coming season may be gone through without experiencing delays and losses due to fire outbreaks.

Since our last issue the people of several states have voiced their sentiments by their votes with startling, and to many, unlooked for results, the details of which are familiar to our readers and we do not mean to go farther than to say that so long as it is possible to bring about such results, so quietly and so effectively, the hope of the future of this country is assured and its stability established beyond all question.

It could be desired and wished that our people were more alert, that is to say quicker to see the trend of things, and check them in their earlier stages, not permitting them to develop and grow until they became rank and offensive. This country has known for many years the rottenness of the political organizations of both of the leading parties, but the people have tamely submitted, and voting on election day for *their* party seemingly concerned about one thing only, viz.: that *their* party be victorious. However, the recent elections indicate a decided change and vastly for the better, and if it means the beginning of the end of the reign of "graft" and the thieving politicians, the country may take encouragement therefrom and see in it the promise and fulfillment of better things in the future when the affairs of town, state and the nation will be honestly managed and administered, having only its interest and welfare in view.

OBITUARY.

George M. Bokee, 74 years old, a retired merchant of Baltimore, Md., died at the home of his son-in-law after an illness of two weeks. At one time he was at the head of the Maryland Brick Co.

Elijah Mountford, one of the pioneer pottery manufacturers of the country and founder of the largest ceramic plant in Trenton, N. J., died of apoplexy at his home in East Liverpool, Ohio. He was 65 years old.

Antone Anderson, a prosperous brick manufacturer in business at Virginia, Ill., since 1870, died suddenly of heart failure. Age 70 years.

John W. Croxall, one of the pioneer potter manufacturers died at his home in East Liverpol, O. He was born in England in 1844. Mr. Croxall was one of the oldest living masons in Ohio.

George Barnhard, 84 years old, and a pioneer of the county, died at his daughter's home in Green, Iowa. For many years he conducted the brick yard at Charles City.

FIRE! FIRE!! FIRE!!!

The plant of the Ohio Brick & Clay Co., at Bolivar, O., was burned to the ground. The plant cost $50,000 some two years ago and carried no insurance.

The plant of the Ft. Wayne (Ind.) Pressed Brick Co., founded by Alex. Johnson, formerly secretary of the State Board of Charities, was totally destroyed by fire. The loss is $15,000, partially covered by insurance.

The Mediapolis (Iowa) Brick & Tile Works owned by A. H. Johnson, suffered a loss by fire carried by a spark from a passing Rock Island freight engine. Insurance will partly cover the loss.

The drain tile works at Rittman, Ohio, owned by W. H. Wright, were destroyed by fire. The loss is complete as there was no insurance.

Fire broke out in the main buildings of the Kellerton (Iowa) Brick & Tile Works which caused a loss of over $5,000, with an insurance of $4,000 on the plant.

MR. HIX AGAIN IN THE HARNESS.

Howard L. Hix, the General Manager of The Wallace Mfg. Co. at Frankfort, Ind., is again at his desk after an illness of the past six months, he having been forced to undergo a very serious surgical operation early in June, since which time, he has been incapacitated for business, being compelled to seek health in a distant clime, but he is now at the helm with his shoulder to the wheel and while his absence has meant much as a hindrance to the Company's business, now that his hand is again on the lever, with the advantageous use of his business integrity, they expect to do a thriving business the coming year.

Mr. Hix very much regrets that the condition of his health at the present time is such as to compel him to give up traveling entirely, thus lessening his opportunities for meeting his many friends and co-workers in the Craft, but hopes, in the course of time, to be able to renew old friendship, and will be pleased to welcome his old friends as well as new ones at the Office.

ACCIDENTS, DAMAGES AND LOSSES.

Condemnation proceedings to secure the right-of-way across th land which is occupied by the Manitowoc (Wis.) Clay Products Co., under lease of the Wisconsin Central Ry., has been started by the Chicago & Northwestern Ry. Co. The clay company has maintained guard over its property for some time.

The Lawton (Okla.) Pressed Brick & Tile Co. and others are being sued by St. Louis parties for the last payment of $3,600 due some time ago for machinery.

Mrs. S. A. Bentley, of Warner, N. Y., was not successful in her attempt to tie up the plant of the Empire Portland Cement Co., alleging that smoke and ashes caused a decrease in her rental of her property, which was estimated at only $25 yearly.

While unloading a wagon with clay at the pit of the Utica (Ill.) Fire Brick Co., William March was crushed beneath the falling rock and clay so that he died shortly afterward.

Calvin Moudy was awarded $1,470 damages for injuries received while in the employ of the Standard Pottery Co. at Brazil, Ind.

James B. Smith has been appointed receiver for the Composite Brick Co., New Haven, Ct. This company bought land but never made any brick, they getting into trouble before plant was built.

Matthew O. Fowler, a potter, was run over by a freight train while on his way home at Tiffin, Ohio, and was instantly killed.

The walls of the new pottery at Macomb, Ill., which were being built, caved in before the roof timbers were put on so to brace them, causing quite a loss to the company.

The Granite Brick Co., Little Rock, Ark., is defendant in a suit for damages brought by George Wadley for injury.

Four men were hurt by an explosion of dynamite which failed to explode when the charges were made at the Purington Paving Brick Co.'s plant at Galesburg, Ill.

G. W. Lyst, an employe of the Rolfe (Ia.) Brick & Tile Works, met with a serious accident while taking off a belt. His clothing caught in it and he was seriously dealt with.

Frank Kodiac, by his mother, has brought suit for injuries sustained at the plant of the St. Paul (Minn.) Brick Co. He lost his thumb on the machine.

A receiver has been asked for in the United States Court for the Continental Brick Company of New Jersey, with principal office at Pittsburg, Pa. It is alleged the company is insolvent.

The Mohawk Pressed Brick Co., Pattersonville, Schenectady Co., N. Y., has been incorporated with $100,000 capital stock. The directors are, Levi M. Strong and Geo. B. Smeallie of Amsterdam; E. E. Dockstader and Wm. W. Barclay of Pattersonville, and W. I. Van De Mark of Kingston.

THE FEDERAL CLAY PRODUCT COMPANY.

The Brick Works at Bolivar, Ohio, was destroyed by fire on the night of November 6th. This was a new factory owned by The Federal Clay Product Co., of Mineral City, Ohio. It was a modern up-to-date plant with a capacity of 50 M Shale Brick per day. This company has three other factories: One located at Canton, Ohio, making shale brick.

One at Mineral City, Ohio, which is an extensive fire brick plant in which they make high grade Fire Brick. For fifteen years this factory has been in constant operation, each year increasing its output and reaching out farther into the fire brick trade until now they ship into nearly every state in the Union and largely into Canada and Mexico. There are no better fire brick made in Ohio than are made at this factory.

The Federal Clay Product Co. has another factory, known as their Sparta Works, where the Famous Impervious SPARTA Face Brick are made. They have at this factory a local deposit of fire clay especially adapted to the purpose for which they are using it. This deposit underlies a tract of about one hundred acres of land, all of which they own and from which possibly four acres have been removed. The clay remaining is sufficient to operate a plant of 100,000 brick per day capacity for fifty years.

The Federal Clay Product Co. was formed a little over a year since with Mr. Geo. J. Markley as the prime factor, buying up the factories of The American Fire Brick & Clay Co., The Canton-Sparta Brick Co., the Model Brick Co., and The Ohio Brick & Clay Co. The management is in the hands of Mr. Markley, who has had years of experience in the manufacture of fire brick and face brick.

Mr. Markley took hold of the Sparta factory after it had passed through the hands of three or four concerns, all of whom made a failure of its operation, and has succeeded in putting it on a paying basis, and producing such material as to make the Sparta Face Brick famous.

Mr. Markley also came to the rescue of The American Fire Brick & Clay Co. when it was in sore straits, took its management and soon had the plant operating on a paying basis and today the plant is considered one of the best fire brick propositions in the state.

With Mr. Markley at its head, the success of the Federal Clay Product Company is assured.

CAN'T TIE UP BIG CEMENT COMPANY.

Mrs. Susan A. Bentley of Warner, N. Y., will not be successful in her attempt to close down the plant of the Empire Portland Cement company in that village because, as she alleges, smoke and ashes issue from the chimneys in such quantities that they seriously damage her property and cause a decrease in its rental value of $25 a year.

Justice W. S. Andrews handed down a decision denying Mrs. Bentley's motion for an injunction and dismissing the motion without costs to the plaintiff. He says in his decision that the company has no right to conduct its business in such a manner that others will be damaged by it, but he finds in this case that the plant is equipped with all the latest appliances. The company has put more than $650,000 into its business. A permanent injunction would compel it to shut down its works. The court says the granting of such an injunction would give such small relief to one party and work such a hardship on the other that he is unable to grant it.

A SEATTLE COMPANY TO MAKE TERRA COTTA.

The Denny-Renton Clay & Coal Co., Seattle, Wash., is building at Van Asset the first terra cotta factory in the Northwest. Several years ago the Denny Clay Company manufactured terra cotta in a small way, but the industry was abandoned. The new plant will give the Denny-Renton Company facilities to compete with any of the larger Eastern manufacturers.

Ernest Maddison, who designed the terra cotta for the Winkler Terra Cotta Company, of St. Louis, which was awarded first prize at the Louisiana Purchase Exposition, will be in charge of the Denny-Renton Company's plant. The company's action in securing Mr. Maddison is the guarantee given that the local corporation's terra cotta will be the best that can be placed on the market.

A two-story building, 80x110 feet, will be given over to the manufacturing of terra cotta. The structure will be erected at a cost of $10,000, including the necessary machinery.

Preparations are being made to resume the making of fire brick at Van Asselt. It has been several years since there were any fire brick manufactured here and preparations for resuming that work are extensive. New drying facilities are being put into the plant.

The entire plant of the company at Benton is being rebuilt. Hot air tunnel driers are being established to dry the brick. A capacity of 100,000 paving brick will be had. The tunnel driers will be operated by drawing the hot air from the cooling kiln and turning it into the driers by massive steel fans.

Eight thirty-four-foot round draft kilns are being built at Renton, at a cost of approximately $4,500 each. A new factory for the manufacture of paving brick, pressed brick, drain tile and common brick is being erected. A continuous kiln for common brick, with a capacity of 20,000,000 per year, is being put in. The entire cost of improvements at Renton will be $100,000.

The company is continuing the work of opening up its coal property at Renton. The mine will be for the company's own use, employing about twenty men.

At Taylor the Denny-Renton company is refitting its plant for the manufacture of pressed brick, electric conduit tile and fireproofing materials. The company will continue to make some paving brick at Taylor. New machinery for pressed brick is being introduced, the improvements costing $15,000.

Plans for the development of the company's property at Kummer are unsettled. The plant there is operated now as a mining proposition to procure coal and clay for the Van Asselt plant.

PENNSYLVANIA PULVERIZING CO. CHARTERED—PLANTS REPORTED PURCHASED.

The Pennsylvania Pulverizing Co., Pittsburg, Pa., has taken out a charter, and it is understood that the company has purchased several plants now operating or being built, the principal business of which is pulverizing quartz and silica sand for the pottery trade. It is understood that the company is composed of Pennsylvania and New York interests, has been developed by S. S. Woods of Lewistown, of the Pennsylvania Glass Sand Co., and is controlled by interests in that company. It is reported that the business of the Chapman Mineral Co., operating in eastern Pennsylvania, is among the interests acquired, and that new plants with capacity of 10 carloads per day will be in operation at the end of the year.

POTTERY WORKERS WAGES FIXED FOR TWO YEARS MORE.

The National Brotherhood of Operative Potters claims—and has during the past two years made good its claim—that it has in operation the model scale settlement plan in the country. Settlements of the wage scale up to two years ago were made between the employers and employes from year to year. At that time an agreement was made for two years and this agreement expires this month. In July of this year the representatives of all the different branches of the pottery industry from the employers' standpoint met in Buffalo, where after a week's conference 14 changes in the present scale of wages were adopted. These changes embraced as many different branches of the trade. All work in the potteries is on the "piece" plan.

By a section of the constitution of the employes' organization these changes are not put up to the manufacturers as a "demand under penalty of a strike." The propositions were placed in the hands of a committee empowered to take them up with the manufacturers. Thomas J. Duffy of East Liverpool is the President of the operatives' organization, and it fell to him to appoint the committee to confer with the employers. President W. E. Wells, also of East Liverpool, is President of the United States Pottery Manufacturers' Association and he appointed the conferees from his organization.

This conference was held during the past month in Philadelphia. The meeting was not announced with the blare of trumpets, nor was it given any big headlines in the newspapers of the city where it was held. The employes were represented by 17 men, headed by President Duffy, and the manufacturers by eight men, headed by President Wells. They selected one chairman and two secretaries, one to represent the manufacturers and the other the employes.

The manufacturers submitted 12 propositions for changes in the scale, as against the 14 which had been presented by the workmen. Most of them were changes in working conditions; some were for individual reductions and advances of wages. The real interest is centered in the fact that after a four days' session the conference adjourned and the announcement was made that agreements had been reached on all the 26 propositions and that they had also signed an agreement for another two years, to October, 1907.

Both sides say they are satisfied with the agreement reached. The two secretaries are now preparing the agreements to be signed by the presidents and secretaries of the two associations.

All minor differences in regard to the price to be paid for the making of a new piece of ware that may be introduced in any of the factories during the two years covered by the agreement are also left to a board of arbitration and its decision is final, which does away with the possibility of any serious trouble at any plant.

ADVANCE SHEETS OF A NEW CATALOGUE

The advance sheets of the new catalogue of the Chicago Brick Machinery Co. are before us. As usual the cuts show up the machine in splendid style and the discription accompanying them is so plain that even the most simple could plainly understand them.

Everything devoted to Dry Press Machinery is well illustrated and described, even to the little supplies used on yards of this kind. If you are interested in this line you had better inquire for this advance booklet.

POTTERY NEWS ITEMS.

The Commonwealth Pottery Co., a local concern at Trenton, N. J., has been incorporated with $125,000. The incorporators are: P. H. Moohan, L. Roden and F. L. Richardson, of Philadelphia.

The Shenango Pottery Co., New Castle, Pa., has been incorporated and reorganized. Among those interested in the new company are: Elmer I. Phillips, E. E. McGill, L. F. Morris, William F. Wallace and Andrew Fleckenstein.

Plants No. 1, 2 and 3 of the Laughlin Pottery Co., East Liverpool, O., will use coal in their kilns on account of the shortage of gas.

The Spokane Pottery Works at Clayton, Wash., has started up its machines and has a capacity of 1,000,000 gallons.

The Columbia Pottery at Kokomo, Ind., has just completed an addition to the west side of their main building and will otherwise improve their plant so as to manufacture lavatories.

Sebring, Ohio, will soon have natural gas for her fuel supply. Recently G. E. & F. A. Sebring contracted for gas to be piped to Sebring.

The Paducah (Ky.) Pottery Co. has been incorporated, with $100,000 capital stock. J. A. Bauer will be president; J. C. Porter, vice-president, and A. A. Pope, of Akron, Ohio, secretary and treasurer. The company will take over the large pottery of Mr. Bauer, which is now running.

Rambottom Bros., extensive pottery manufacturers at Roseville, O., have let the contracts for a steel fireproof structure 50x150 feet to be erected at the Roseville plant.

The Board of Trade of Findlay, Ohio, has succeeded in locating a porcelain works in the old Bell Pottery Co.'s plant. The company will remodel the plant and make electrical porcelain.

W. F. Keates of Owensboro, Ky., has succeeded in locating a pottery in Cannelton, Ky.

The Henry C. Wisner Co., Baltimore, Md., has been incorporated with $100,000 to manufacture earthenware and china. Incorporators are Thornton Rollins, Baltimore; H. B. Stagg, Hackensack, N. J., and Frank P. Wisner of New York.

D. J. Roberts, who has founded several clay works in the west is at Hamilton, Mont., and has almost completed arrangements for the location of a factory to make earthenware.

Manager P. B. Woolson, of the Marshalltown (Iowa) Pottery Company, has resigned and has gone to Clarinda where he is connected with the machine shop and foundry.

The Trenton (N. J.) Potteries Co., has resumed work at its plants on Saturday afternoons on account of the amount of work that is to be turned out.

The Wannopee Pottery buildings at New Milford, Ct., which have been idle for three years, have been sold to the New Milford Power Co. and electrical supplies will be made.

SAND OR LIME-BRICK OR BLOCK NEWS.

J. Q. Baker, Andrews, N. C., wants information regarding machinery and processes for making sand-lime brick.

E. P. Stiles contemplates organizing a company at Huntsville, Texas, for the establishing of a sand lime brick plant.

The Silicate Brick Mfg. Co., Hamilton, Ontario, are ready to turn out their brick at the rate of 40,000 daily.

The Commercial Club of Paducah, Ky., are looking over their sand beds with a view of having some sand lime brick company locate there.

The Semisteel Co., 701 New England Bldg., Cleveland, O., are sending out a very unique booklet describing a visit to one of the plants in Indiana installed by them.

The Bond Sandstone Brick Co., De Land, Fla., reports that they are unable to keep up with their orders, although they have recently doubled the capacity.

The plant of the Indiana Sand Lime Brick Co. at North Judson, Ind., is to be doubled in size by adding a new machine and cylinder and electric lights.

The Texas Sand-Lime Brick Co., Dallas, Texas, has been incorporated with $200,000 capital stock by E. L. and J. L. Long of Dallas, and O. O. Durland of Oklahoma City.

P. C. Forrester has gone to Tacoma, Wash., from Illinois and will enter into partnership with another man to make sand-lime brick.

An addition has been made to the plant of the Michigan Pressed Brick Co.'s plant at Detroit, Mich. This plant operates under Huennekes system.

The Jackson (Miss.) Pressed Stone & Concrete Co. has been incorporated with $10,000 capital. John Mosal and F. J. Ort are the principal owners.

The Ewing Concrete Machinery Co., Akron, O., has been incorporated with $10,000 capital stock. The incorporators are L. D. Ewing, John Sheffer, A. E. Heintselman, J. E. Shelhart and W. O. Wise.

The stockholders of the Milholland Pressed Brick Co., Marion, O., recently held their annual meeting and decided to enlarge the capacity of the plant so that they may keep up with the orders.

The Menominee (Mich.) Brick Co., have completed their building, which has been not closed in for the summer and are now making stock for the next season.

The Steger Sand Lime Brick Co., of Bonham, Texas, is promoting a plant at Oklahoma City, Okla. C. F. Colcord, E. F. Dunn, John Threadgill and others are reported interested.

The plant of the Manitoba Pressed Brick Co. at Beausejour, Manitoba, will be kept running full handed this winter. George Bradbury who organized the company is the manager.

The Mohican Brick Co., Fort Edwards, N. Y., has passed from the hands of the original owners to William J. Gallagher and B. G. Higby, who also own a good share of the stock of the Sandy Hill (N. Y.) Brick Co. Both plants are Huennekes system plants.

MISCELLANEOUS ITEMS.

The Walter S. Dickey Clay Mfg. Co., Kansas City, Mo., will build a manufacturing plant at Chanute, Kansas.

The Rooks-Pfeiffer Pressed Brick & Tiling Co., Harrisburg, Arkansas, is erecting their plant.

The Inter-State Clay Products Co. with a $1,000,000 capital stock, has been incorporated at Huron, S. Dak.

The Composite Tile Co., Raleigh, N. C., is completing arrangements for the erection of a plant for the manufacture of roofing tile.

Thos. Louden, of Fairfield, Iowa, has organized the Fairfield Brick & Tile Co. and the buildings are now being built.

The Minnesota Ceramic Co. is making extensive improvements to the plant at Coon Creek, Minn. A. F. Waselewski, of Anoka, has charge of the work which will cost $30,000.

The Diamond Brick & Tile Co. have nearly completed their plant at Arcadia, Kansas, and are now installing the brick making machinery.

The Streator (Ill.) Clay Mfg. Co. will put in a new steam plant. The boiler room will be of brick 60x75 feet, and consist of a battery of four 72-inch by 18 feet boilers.

The Algona (Ia.) Brick & Tile Co. are now putting up a steam drying plant so that they can continue work during the cold weather.

E. E. Kenfield, Washburn, Wis., has had clay tested for making of brick and the prospects are that a plant will be built there in the spring.

The Dempsey Brick Co. has been incorporated with $200,000 capital stock. Incorporators are Michael Dempsey of Rutherford, N. Y., Frank W. Schmidt of Lyndhurst, and John R. Connelly of Kingsland.

The Defiance Tile Mills Co., Defiance, O., has taken over the Law Tile Works. F. E. Creelman of Chicago, is president; John W. Lynde, vice president; C. J. Daoust, secretary and treasurer.

It is now assured that the Columbus Hocking Coal & Iron Co. will build a brick plant in the Hocking Valley the coming spring. Plans are now being prepared for the plant which is to be built in the neighborhood of Nelsonville,O.

The Utica (N. Y.) Pressed Brick Co. which bought land at Vienna, with a view of starting a plant, have again taken up the matter with Canastota citizens with a view of building on a smaller scale than was first proposed.

The Zumbrota (Minn.) Clay Mfg. Co. has been incorporated with $100,000 capital stock. The directors are A. J. Rockne, F. G. Marvin, William F. Bevers, S. B. Scott, P. C. Kalass, N. T. Wedge, and H. E. Weiss.

The Paola (Kan.) Brick & Tile Co., directors met and accepted the resignation of the former officers and elected John F. Donahoe, pres.; J. C. Young, vice pres., and John F. Merrill, secretary-treasurer and manager. O. S. Norris, the former manager, is the superintendent. It is the intention of the company to enlarge the plant.

J. H. Fisher, Topton, Pa., is rebuilding his kilns.

E. B. Johnson, Granger, Oregon, will enlarge his plant by putting in a steam dryer and a larger machine.

Bardolph (Ill.) is excited over the prospects of a new brick factory.

The brick yards belonging to the Central Brick Exchange, New Britain, Ct., manufactured seventy-two million brick this year, all of which have been sold.

The National Fireproofing Co. has decided to hereafter make pressed brick at its Port Murry, N. J., plant instead of fireproofing tile.

The Denny-Renton Sag & Coal Co., Seattle, Wash., have bought a site on the tide flats for their yards and offices, paying $31,000 for same.

H. Lienhard, of Handsboro, Miss., has optioned his brick yard, sawmill and logging road to the L. N. Dantzler Lumber Co., of Moss Point.

George Dickmann has sold his brick plant at Tell City, Ind., to William Cluthe, who will conduct it under the name of Cluthe Brick Company.

Geo. W. Drury has resigned the presidency of the York (Pa.) Bridge Co. on account of the organization of the George W. Drury Brick Co., which will build a plant on Gettysburg Pike.

The Oakland Pressed Brick Co., Zanesville, O., contemplates the increasing of the capacity of their plant by building additional kilns and installing new machinery before the spring season.

The South River Brick, Stone & Cement Co., Atlanta, Ga., has been incorporated with $300,000 capital stock. The proposed plant is in reality an expansion of the South River Brick Co.

The United States Brick Co. has purchased the plant of the Reading Shale Brick Co. at Wyomissing, Pa. The company will conduct it in connection with its seven other plants having a total capacity of 200,000,000 brick per annum.

The Iroquois Realty Co., Coshocton, Ohio, has organized with $50,000 capital stock with John Conley, pres.; Robt. Porteus, vice-pres., and Joseph Porteus, general manager. They bought 115 acres of land adjoining the city on the south and will manufacture brick.

The New Cedar Grove (W. Va.) Coal & Brick Co. has been incorporated with $25,000 capital stock. They propose to develop and enlarge the plant that was operated on a small scale in the east end of town. Leo. Schaffer, Henry Calderwood and Thomas and Henry Boyd are the new owners.

The Peterson-Kartschoke Brick Co., San Francisco, Cal., has been incorporated with $150,000 to manufacture brick terra cotta, sewer pipe and tile. Gustave Kartschoke, of San Francisco, Walter S. Farrar, S. W. Smith, of Alameda and M. S. Blanchard and Wm. H. Young of San Francisco, are the directors.

F. H. Shultz, Treynor, Iowa, has completed the arrangements for starting a brick yard at that place.

The Portsmouth Brick & Tile Co., Portsmouth, Ohio, are considering the burning of their goods by gas.

Ceylon, Minn., citizens are having their clay tested with a view of starting a brick and tile works.

The brick works at Spencer, N. Y., will be opened again in the spring. New machinery and a steam dryer will be installed. Geo. W. Cook will look after the improvements.

Grand Ledge, Mich., is to have a new plant for the manufacture of clay products. Forty-six acres of land has been bought at the Lawson farm.

Assurances are given that the Columbus Hocking Coal & Iron Co. will build a large brick plant near Nelsonville, Ohio, in the spring.

The Cheltenham Fire Clay Co., St. Louis, Mo., has been organized with $5,000 capital stock. Incorporators: John W. Gannett, Leonard F. and S. Mitchell.

The Standard Vitrified Conduit Co., New York, has been incorporated by William P. Chapman, Jr., Chas. R. Gauter and Enery H. Sykes.

The Lincoln (Ill.) Mining Co. has been incorporated with $2,500 capital stock to manufacture brick and tile and mine coal.

The Craine Brick Co., Cleveland, O., has been organized with $30,000 capital stock by Christ Burkhardt, John A. Keymer, John H. Craine and E. J. Rosecrans.

The Builders Brick Co., Chicago, has been organized with $75,000 capital stock by Joseph Russ, Frank Randak and Richard Dazul.

On account of the boycott against prison made brick 2,000,000 brick are piled up at the Walla Walla, Wash., prison.

The Horatio (Ark.) Fire Brick & Building Brick Co. has been incorporated with $100,000 capital stock. The directors are W. H. Maddox, of Texarkana, Ark., G. B. Pride, Horatio, and S. T. Bisbee, of Oklahoma City.

It is reported that the National Brick Co., Chicago, will begin operation at two of its plants this month and the third plant will be operated in the spring, each having a 400,000 brick daily capacity.

The C. P. Meyer Brick Co., registered office 147 East State St., Trenton, N. J., has been incorporated with $125,000 capital stock. Incorporators: Mark G. Hibbs, G. M. Magley and Sadie Togue.

The South Memphis Brick Mfg. Co., has been incorporated with $150,000 capital stock at Memphis, Tenn. Frank H. Reid, Lee Mallory and E. B. Berry are the proprietors.

John M. Elliott, of Lisbon, and Eugene Evans, of Uhrichville, O., will operate the National Furnace Brick works at Rogers, Ohio, owned by J. W. Hall. The plant will be operated as a tile works. For the present their office will be in Lisbon.

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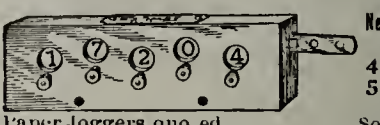

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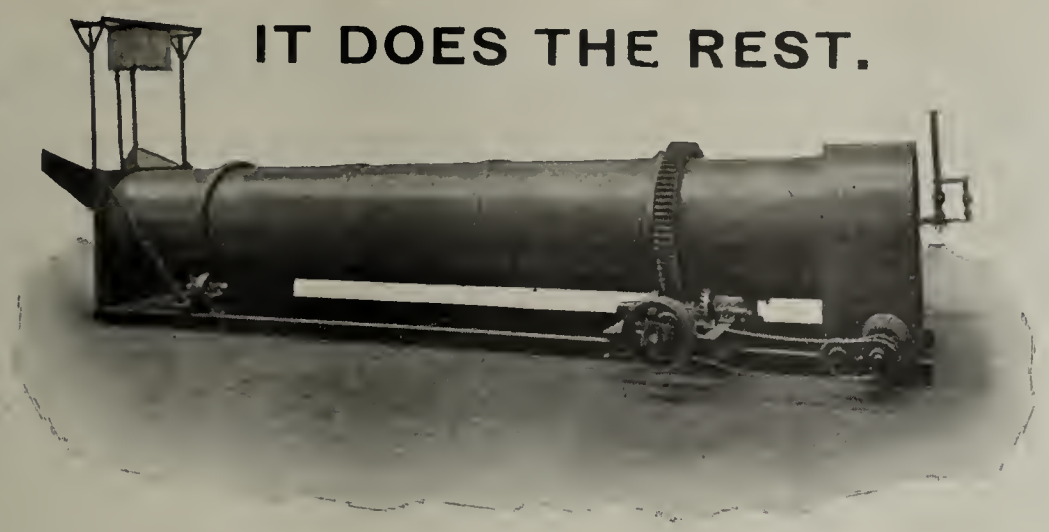

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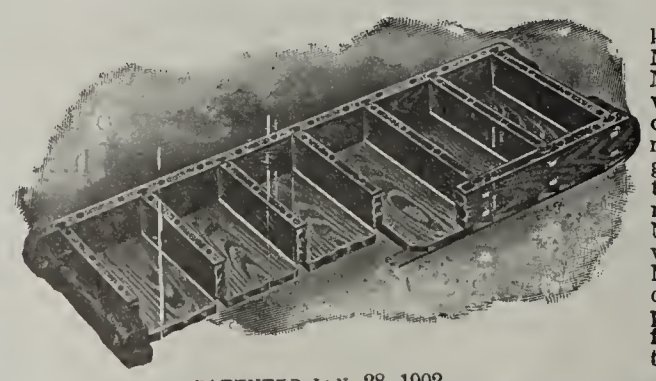

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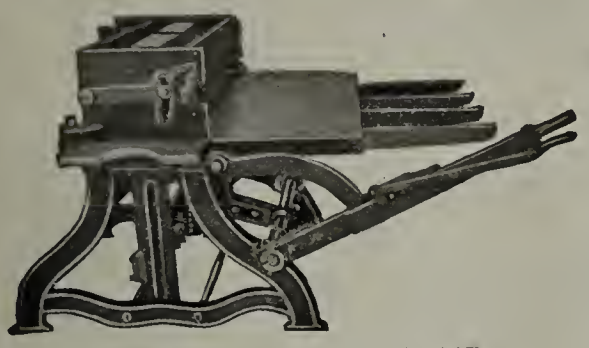

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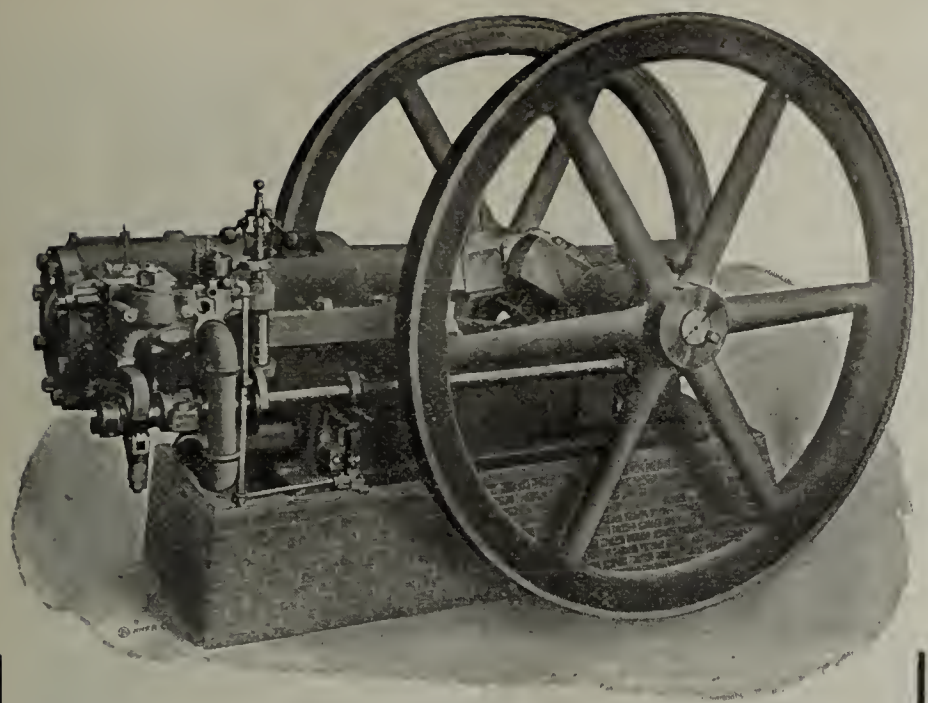

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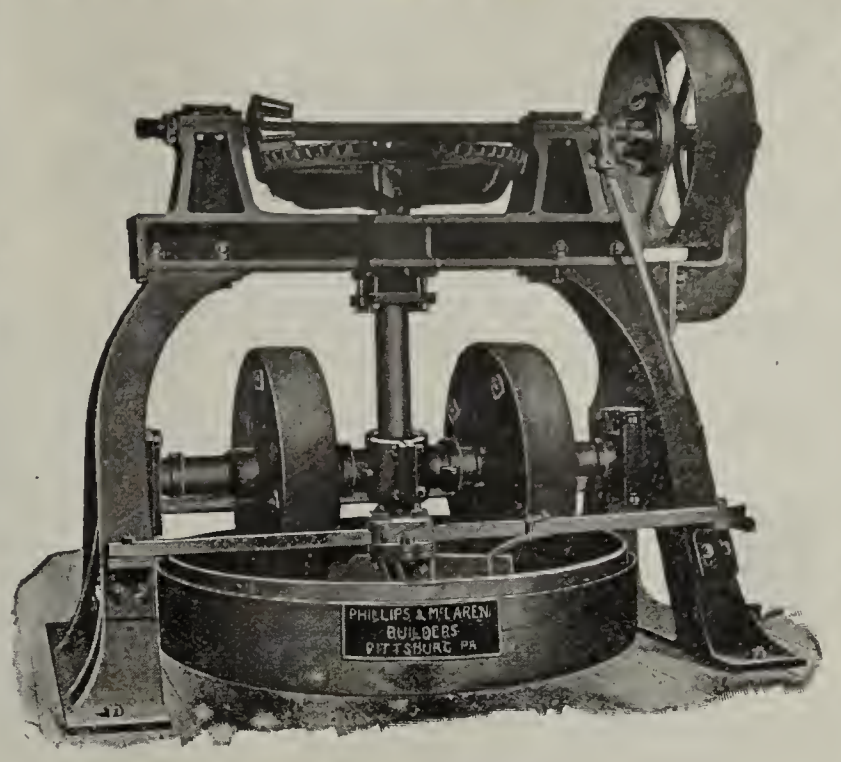

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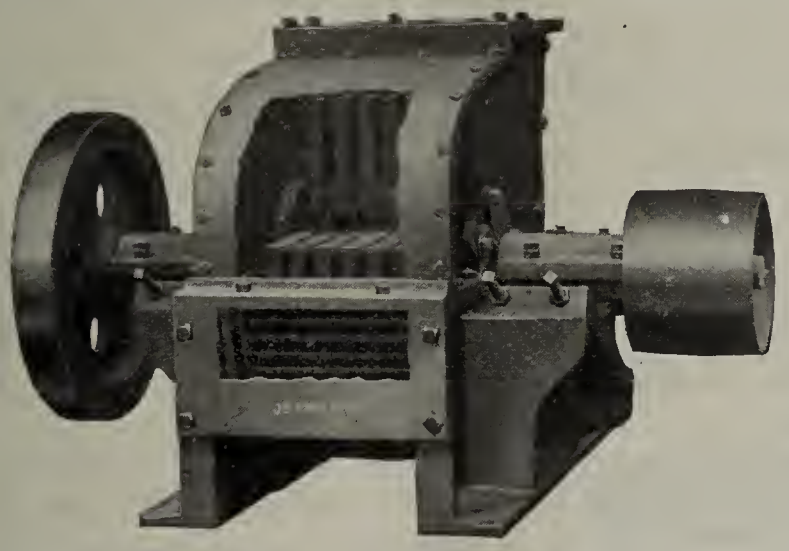

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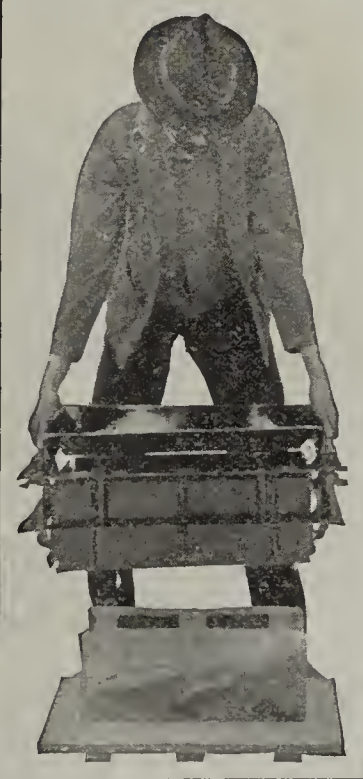

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Change Your Idle Days from a Loss to a Profit.

OUR PORTABLE HOLLOW CONCRETE BUILDING BLOCK MACHINE

Is the BEST, FASTEST, SIMPLEST and CHEAPEST on the market.

1 Man Can Make 200 Blocks Per Day

No carrying off blocks, consequently no loss by breakage, no expensive iron pallets, no cogs, gears, springs or levers, but it does the business

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DRY PAN

With Independent
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A well-tried and
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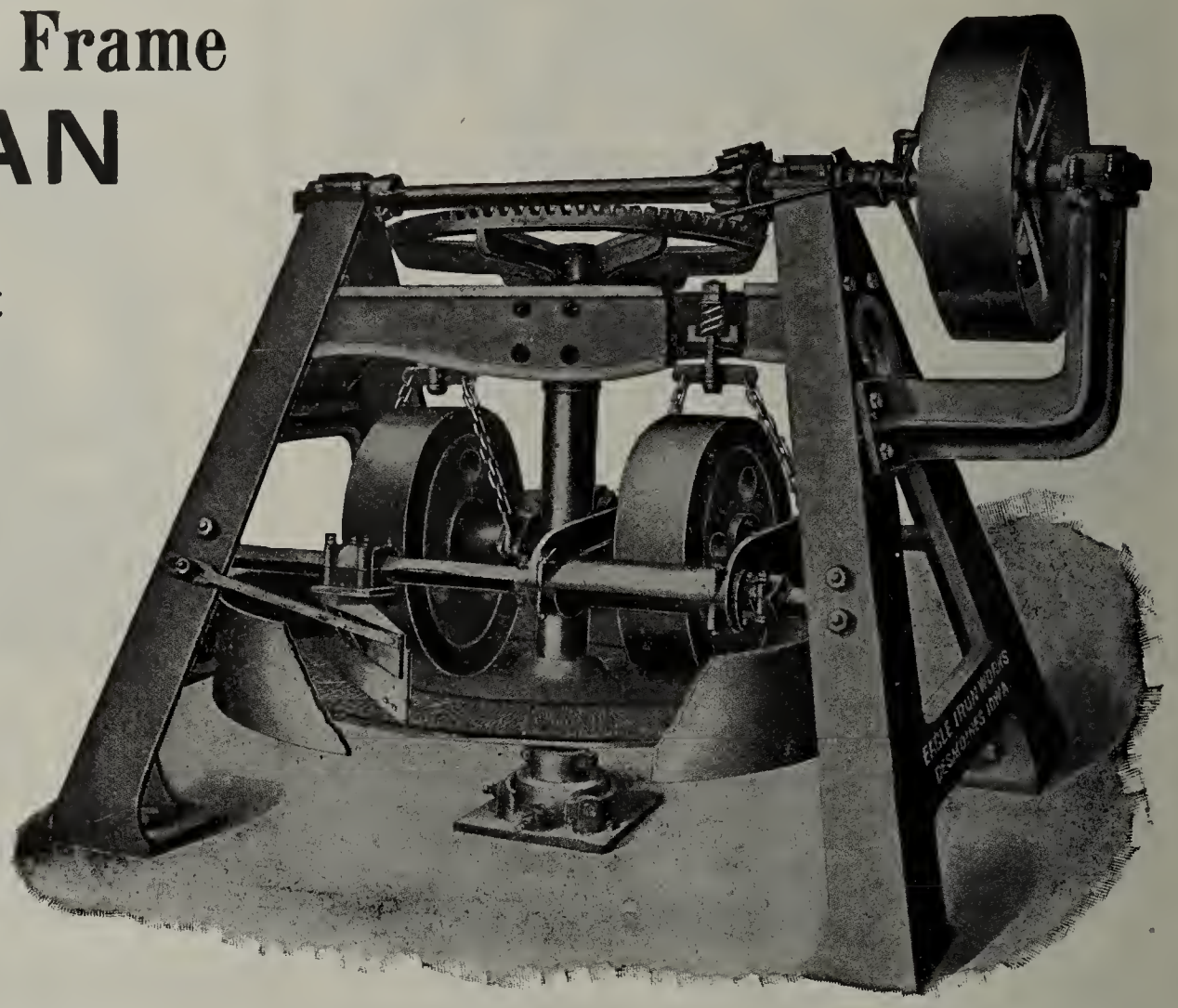

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Erie Railroad Chicago to New York

The Erie Railroad System's Industrial Department has all the territory traversed by the railroad districted in relation to resources, markets and advantages for manufacturing, and can advise with manufacturers of specific products as to suitable locations, furnishing them with current information of a comprehensive nature. dealing with the project in its full relation to manufacture and commerce.

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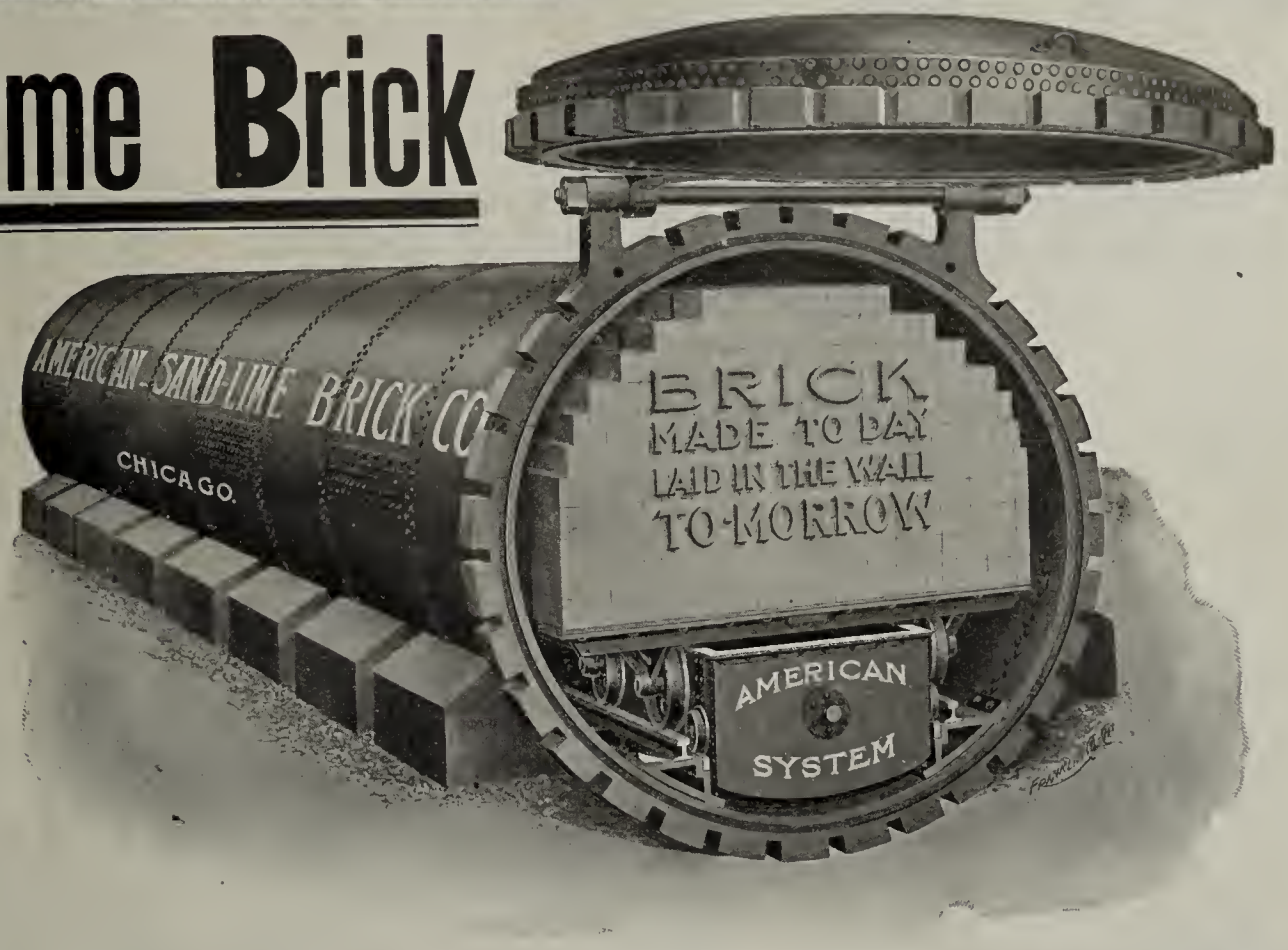
BUILDING MATERIAL

CHEAP—DURABLE—

BEAUTIFUL.

Plants Installed and Started Under Iron-Clad Guarantees. Equipped Throughout with Machinery Built in Our Own Shop.

Our Latest Booklet tells all about it. *Sent Free.*



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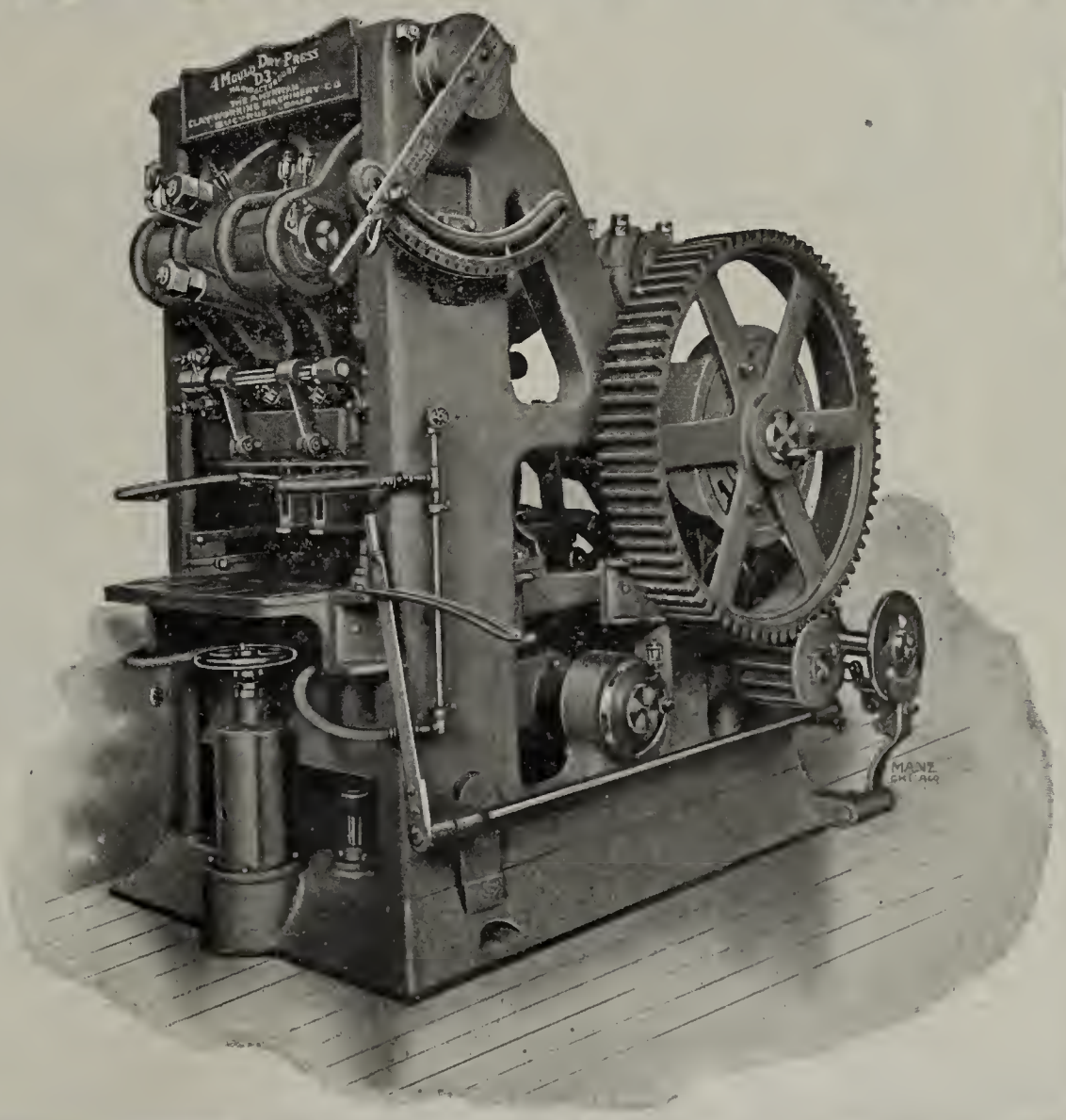
DRY PRESS BRICK MACHINERY

Our Dry Press Machinery has a range in style and capacity to exactly meet the needs of each individual purchaser. Each machine is built of excellent material on massive lines. The construction is most careful and the finished machine is capable of exerting a vast amount of pressure.

All joints carefully fitted. All gearing heavy and strong. Side frames massive. Adjustable mold feed and pressure. Long dwelling pressure. Smoothe, dense, perfect brick.

We build Stiff, Soft Mud and Sand-Lime Brick Machinery, all kinds of Dryers and their equipment. We build all our own Dryers and can guarantee them.



THE

American Clay Machinery Co.

BUCYRUS, OHIO, U. S. A.

Sand-Lime Bricks and Blocks

Machinery and Process

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H. HUENNEKES CO.

(INCORPORATED)

Is up-to-date and produces

HIGH-GRADE BUILDING MATERIAL

(SEE OPPOSITE PAGE)

"Huennekes System"

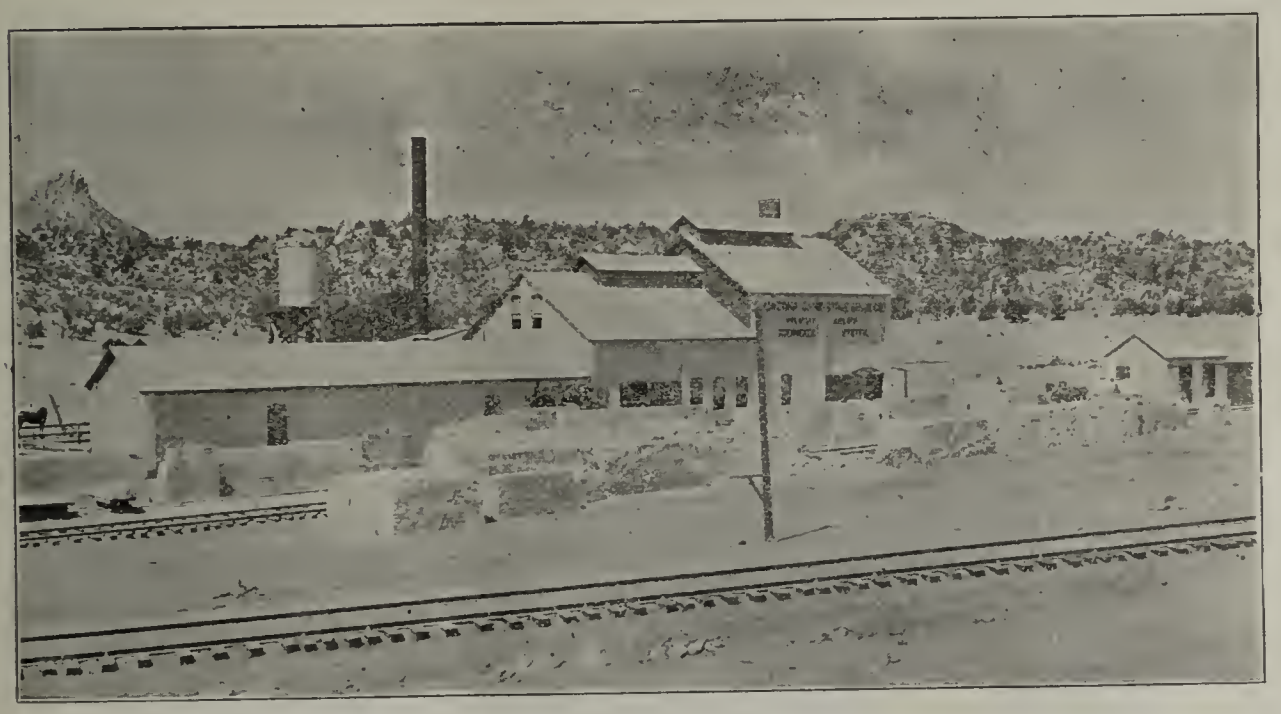
SAND-LIME BRICKS AND BLOCKS

25 Factories Designed, Equipped and Set in Operation During the Past Year in the United States and Canada.

OUR RECORD: Combined capacity of factories in 1903, 15 million bricks per annum.
Combined capacity of factories in 1904, 150 million bricks per annum.

Received from the Jury of Awards at the Louisiana Purchase Exposition the highest award for excellence of sand-lime brick.

U. S. Company's Quarters Whipple Barracks, Prescott, Arizona, Erected Out of "Huennekes System" Sand-Lime Bricks.



Factory of the Arizona Sand-Stone Brick Company, "Huennekes System" Prescott, Arizona. Finished in Bricks of Their Own Manufacture.

"THINK THIS OVER."

Before the expiration of this year the total combined capacity of the factories erected and operated under the "Huennekes System" will be about 300 million bricks per annum—or a growth of about **2,000 per cent in one year.**

Remember the doubts and scoffings about the "**dry pressed brick**" but a few years ago and the money made by the pioneers in this business.

The Sand-Lime Brick Business is to day in the identical state as the dry pressed brick business was but a few years ago.

All of our special machinery is manufactured in the United States by the foremost machine shops in their particular line of business, and are thoroughly tested, insured and guaranteed before leaving shops. All special machinery, as well as our methods and process are fully protected and covered by United States Patents. **Without the use of the same it has proved impossible to produce a high grade brick out of sand and lime in a commercial way at a low cost. The rapid growth of our business from 15 million brick per annum in 1903 to 150 million brick per annum in 1904** is not only a proof of the merits of the "Huennekes System." but also of the product itself.

Send for free booklet, tests and testimonials.

The original, oldest and only experienced **Engineering Firm** in the Sand-Lime Brick Industry.

H. HUENNEKES COMPANY

Engineers and Contractors for the
Erection of Sand-Lime Brick Factories.

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BRICK MADE ON OUR SAMSON PRESSES.

SEMISTEEL CO.

Sand-Lime Brick

Plants Erected of any Capacity

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INDIANA SAND-LIME BRICK CO.

North Judson, Ind., Oct. 13th, 1905.

THE SEMISTEEL CO., Cleveland, Ohio
Gentlemen:

We have our plant in operation and have many orders on our books. We are very well pleased with the machinery which we purchased from you, and trust same will continue to be satisfactory, as we now feel more than ever that we made no mistake in buying your system.

Yours very truly,
(Sd) INDIANA SAND-LIME BRICK CO.
Per Silas Myres, Secy."

Have you any Sand?

If so, you need what we have.

Our System is used by the first Sand-Lime Brick Plant in the United States, and has been in continuous operation and has produced and sold more brick than any other single plant.

Send for information. We have equipped plants in all parts of the United States. We do not use cement or chemicals, and do not sell patent rights.

SEND FOR FREE BOOK.

We are not brokers, but operate our own foundry and machine shop.

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Special Sand Brick Presses
Hardening Cylinders
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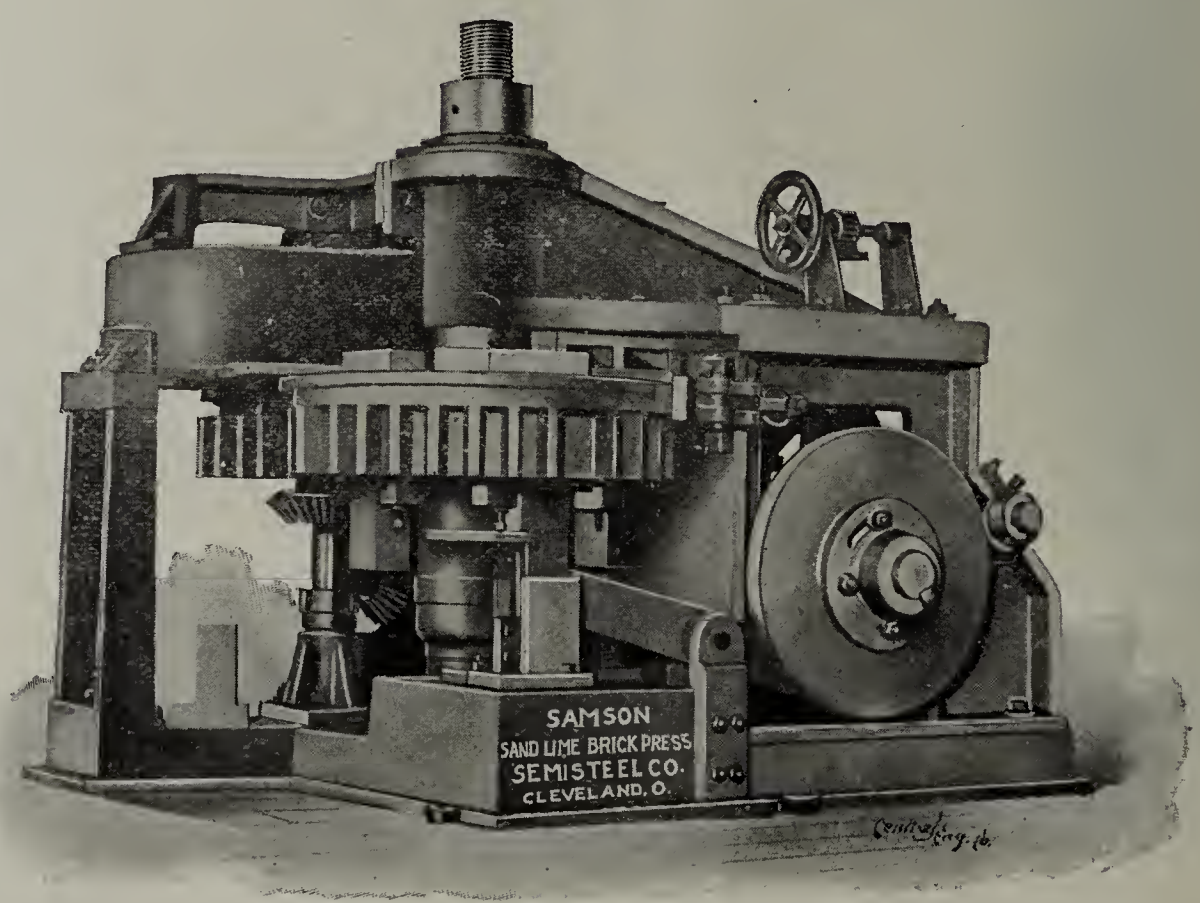

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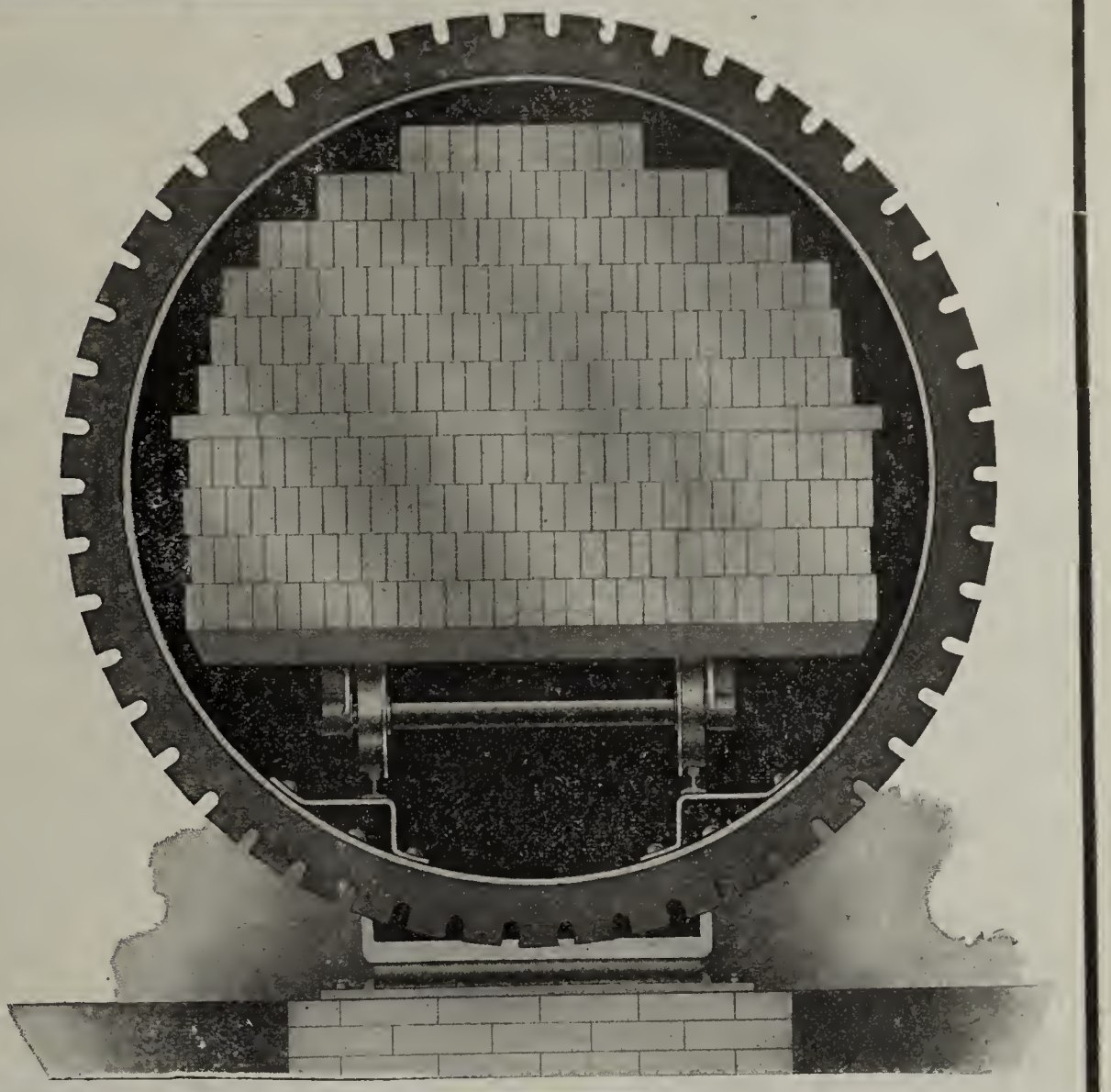
SAND-LIME BRICK MACHINERY

Our Sand-Lime Brick Machinery is at least a little better than any other. We have testimonials to show it. We build it all in our own factory and are sure of its quality. We are the only firm doing this. We will design and equip your entire plant, or will sell you parts of your equipment. Our catalog, describing and illustrating our full line, will be sent upon request.

We also build a full line of machinery and appliances for making Clay Products, Cement and Pottery, Dryer and Dryer Apparatus.

Everything we sell we make. We therefore know its quality to be right.



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HANDLE YOUR CLAY WITH ONE MAN AND

The Thew Steam Shovels

Made in Four Sizes. Mounted on Car Wheels or Traction Wheels.

Type No. 3 Shovel—George Gynn Brickyard, Cleveland, O.

Especially adapted for brickyard requirements. The shovel operates in a complete circle, enabling material to be delivered at side or in rear at will. The Dipper is hung from a horizontally moving carriage and can be adiusted to cut to any desired level.

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Wire Cables used instead of Chains.
Strictly First-Class in Every Detail.

Economical for brickvards 30,000 to 40,000 daily capacity.

Operated by one man for outputs up to 125,000 brick per day.

Write us for Catalogues and Information.

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What it Stands For

UNTIL the advent of the "SCIENTIFIC SYSTEM" there was no process for making SAND LIME BRICK which *automatically* insured the proper mixing of the materials. The correct preparation and mixing of the materials is the most important step in the making of good SAND LIME BRICK, since upon the *preparation* and *mixing* alone depends the excellence of the finished product.

The "SCIENTIFIC SYSTEM" insures *absolute uniformity* in these most important operations, our Preparing Machine RELIANCE being so near automatic that it can be managed by *one common laborer.*

We want you to know about this system, and therefore invite the strictest investigation, being convinced that you will not fail to see the many advantages which our "SCIENTIFIC SYSTEM" presents over all others for the manufacture of SAND LIME BRICK.

Why not send for our booklet? It explains our system in detail. It contains information regarding the manufacture of SAND LIME BRICK that you *ought to have.* We are engineers whose entire time and thoughts are devoted to the designing and construction of SAND LIME BRICK PLANTS. We have made a specialty of this industry and we *know* that we can convince you that our methods are *Right.*

We Equip your plant

You Make the brick

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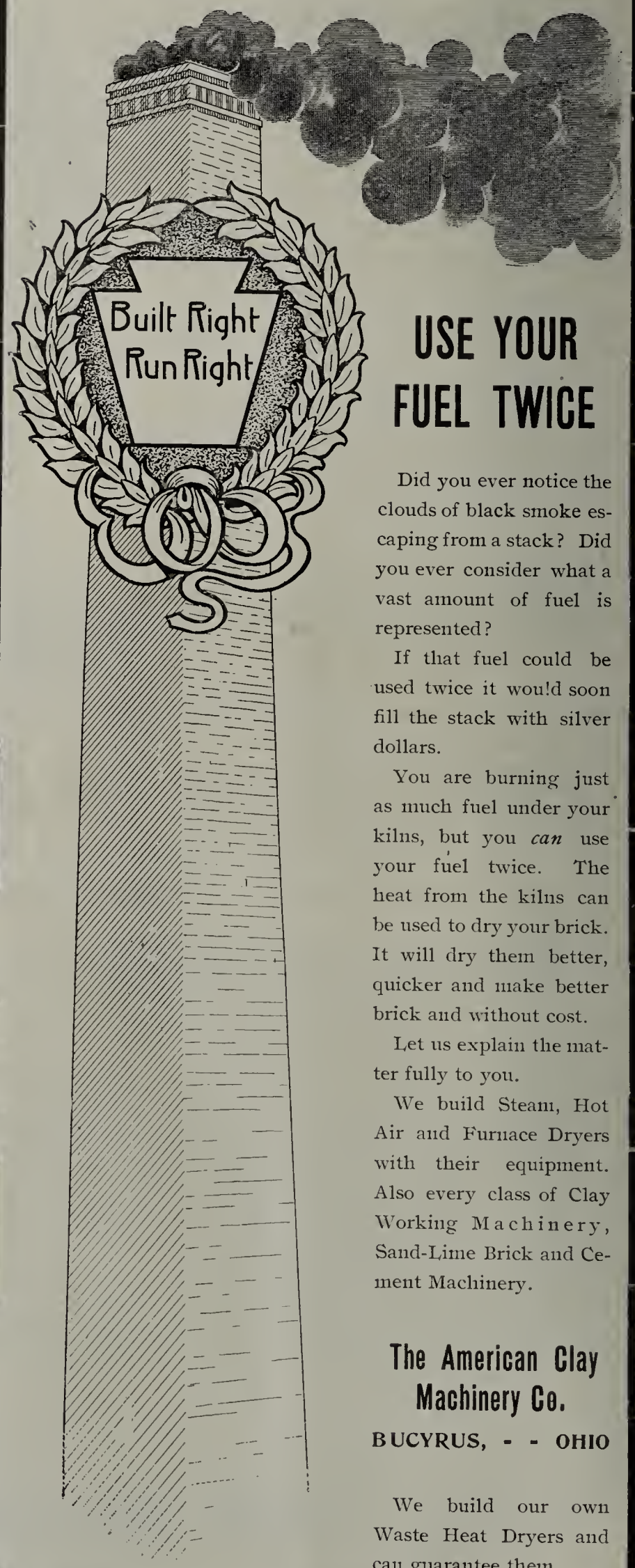
YOUR FUEL USED TWICE



USE YOUR FUEL TWICE

Did you ever notice the clouds of black smoke escaping from a stack? Did you ever consider what a vast amount of fuel is represented?

If that fuel could be used twice it would soon fill the stack with silver dollars.

You are burning just as much fuel under your kilns, but you *can* use your fuel twice. The heat from the kilns can be used to dry your brick. It will dry them better, quicker and make better brick and without cost.

Let us explain the matter fully to you.

We build Steam, Hot Air and Furnace Dryers with their equipment. Also every class of Clay Working Machinery, Sand-Lime Brick and Cement Machinery.

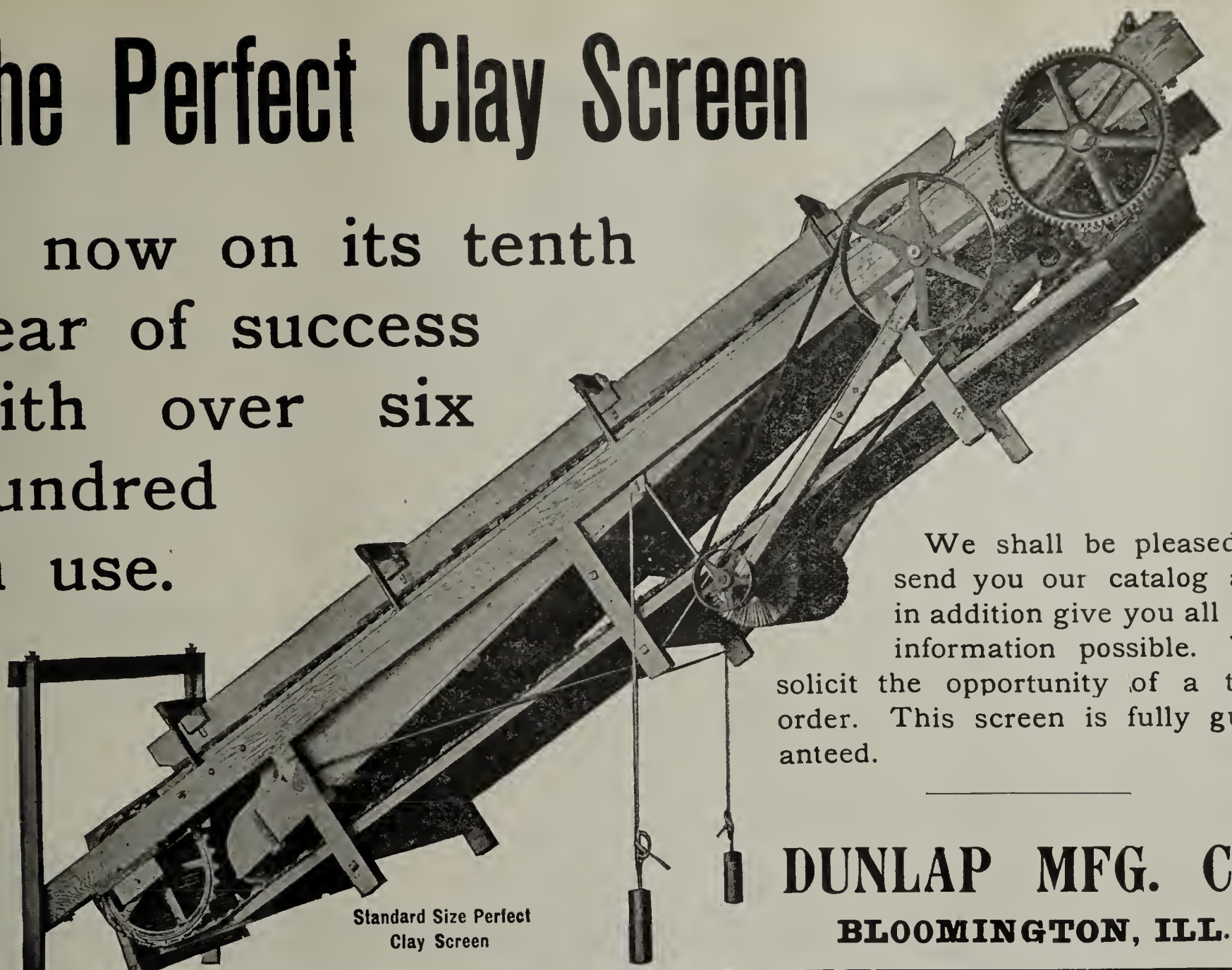
The American Clay Machinery Co.

BUCYRUS, - - OHIO

We build our own Waste Heat Dryers and can guarantee them.

The Perfect Clay Screen

Is now on its tenth year of success with over six hundred in use.



Standard Size Perfect Clay Screen

We shall be pleased to send you our catalog and in addition give you all the information possible. We solicit the opportunity of a trial order. This screen is fully guaranteed.

DUNLAP MFG. CO.

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THE NEW YORK BLOWER CO.'S ... WASTE HEAT DRYER

Has saved more money to brickmakers than any other apparatus.

It is an investment that pays for itself in a short time.

Our apparatus is perfect.

We will investigate any Waste Heat Dryer proposition and make plans and estimates free of charge.

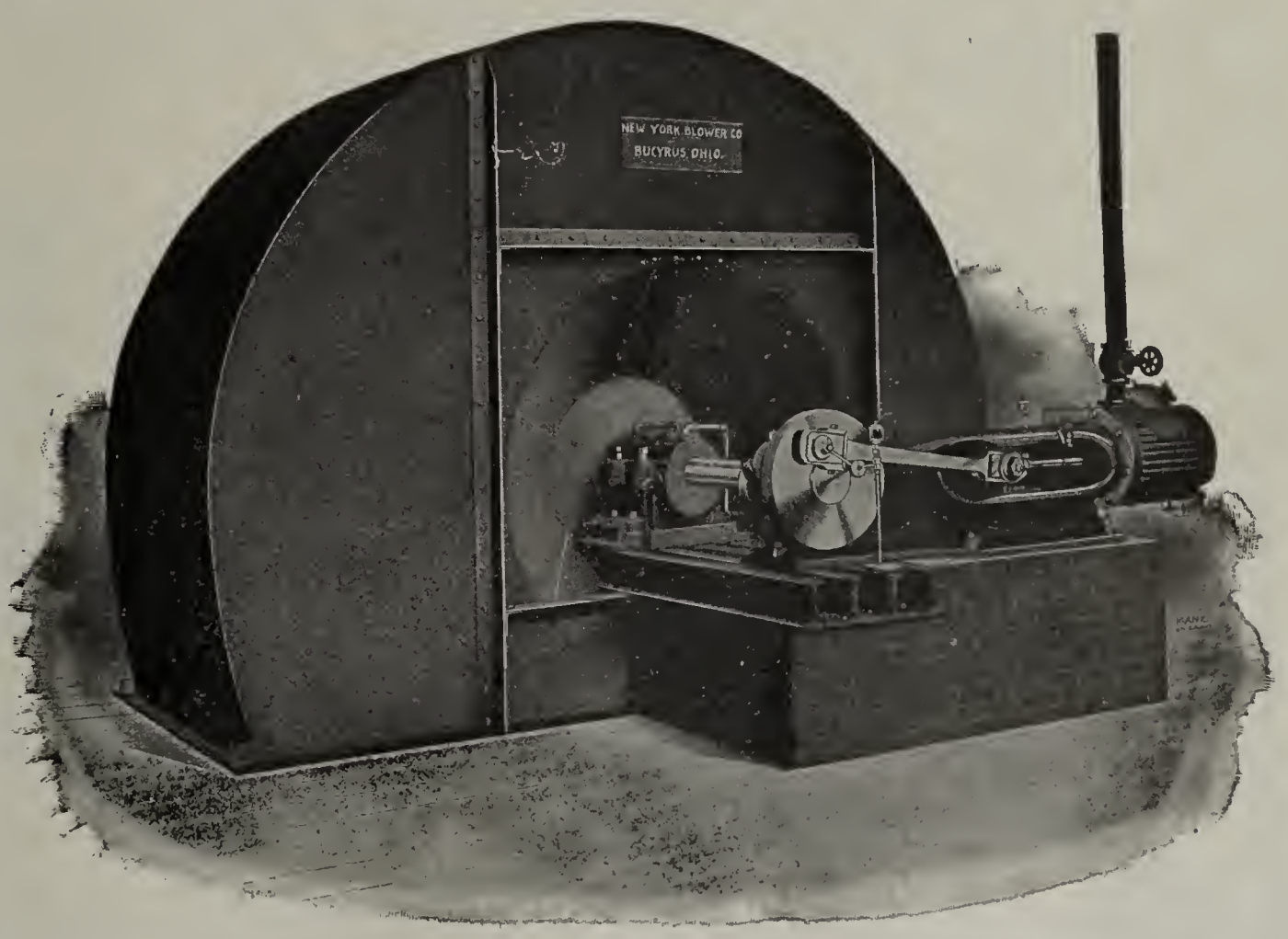
We rebuild any old Dryer into a Waste Heat Dryer at the least possible cost.

We can show a clean record and a long record of Waste Heat Dryers all over the country.

Our Waste Heat Dryers shorten time of burning, save coal, increase capacity, help the color of brick.

Write for our catalogue No. 54 on Waste Heat Dryers.

We also furnish fans for forceddraft on kilns, for water smoking, for hot floors. We furnish steam coils for utilizing exhaust steam. Write us.



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Convenient Saving

Saving is generally **inconvenient,** owing to the fact that it necessitates **doing without.**

Saving **Waste Heat** is **convenient** saving, for the reason that it only requires **doing with.**

With it dry your brick and your yearly income will be greatly increased without inconvenience.

Save Conveniently

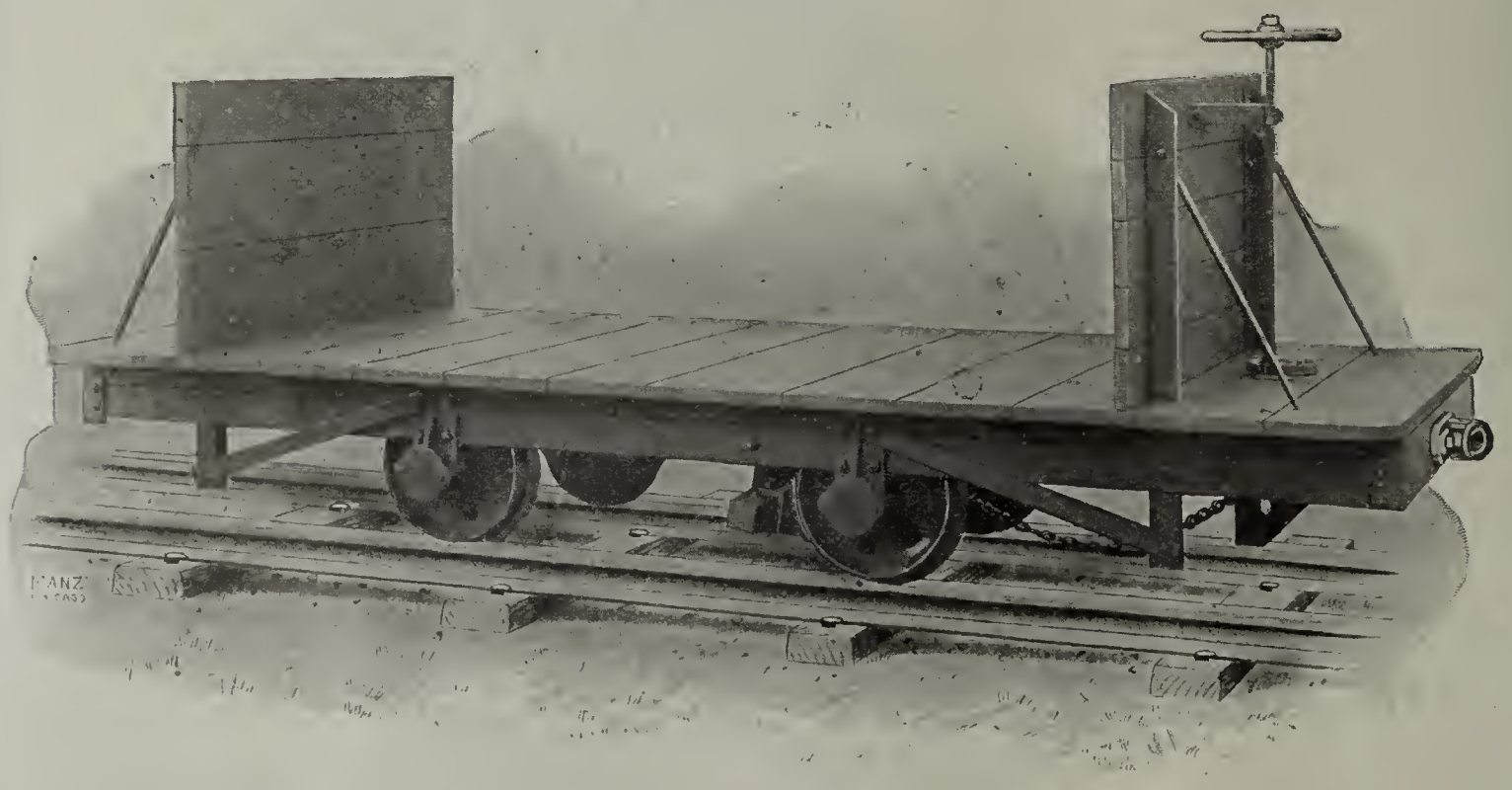
L. E. RODGERS ENGINEERING CO.

WASTE HEAT DRYER SPECIALISTS

303-305 Dearborn Street, *CHICAGO*

DRY CARS, DUMP CARS, TRUCKS, ETC.

We build a complete line of Dry Cars, Dump Cars, Turn Tables, Barrows and Trucks. In fact every machine and apparatus used in the manufacture of Clay Products, no matter by what process. We have built an addition to our car factory, doubling its capacity. Quality of product has made this necessary. Quality and prompt shipment should interest you. Write for information.
Remember we build our own Waste Heat Dryers and can guarantee them.



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THE AMERICAN CLAY MACHINERY CO.

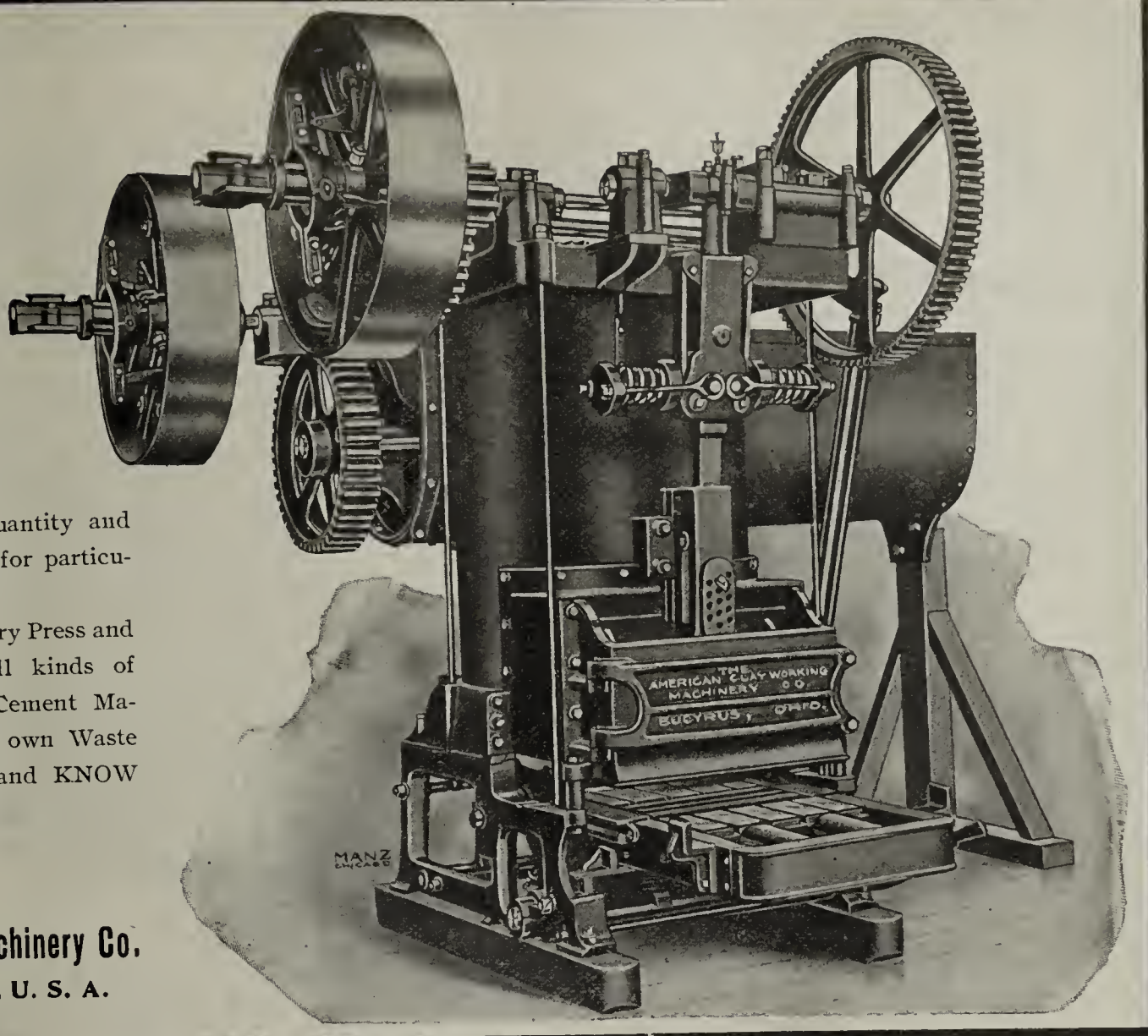
BUCYRUS, OHIO, U. S. A.

SOFT MUD BRICK MACHINERY

Our Soft Mud line of Machinery and Appliances is complete from Molds to Full Outfits. Design superior. Material flawless. Workmanship faultless. From smallest capacity to greatest our Machines will give complete satisfaction.

If quality of Machinery and quantity and quality of Brick interest you, write for particulars and catalog.

We build Soft Mud, Stiff Mud, Dry Press and Sand-Lime Brick Machinery. All kinds of Dryers of Quality. Pottery and Cement Machinery. Remember we build our own Waste Heat Dryers in our own shops and KNOW their quality to be the best.



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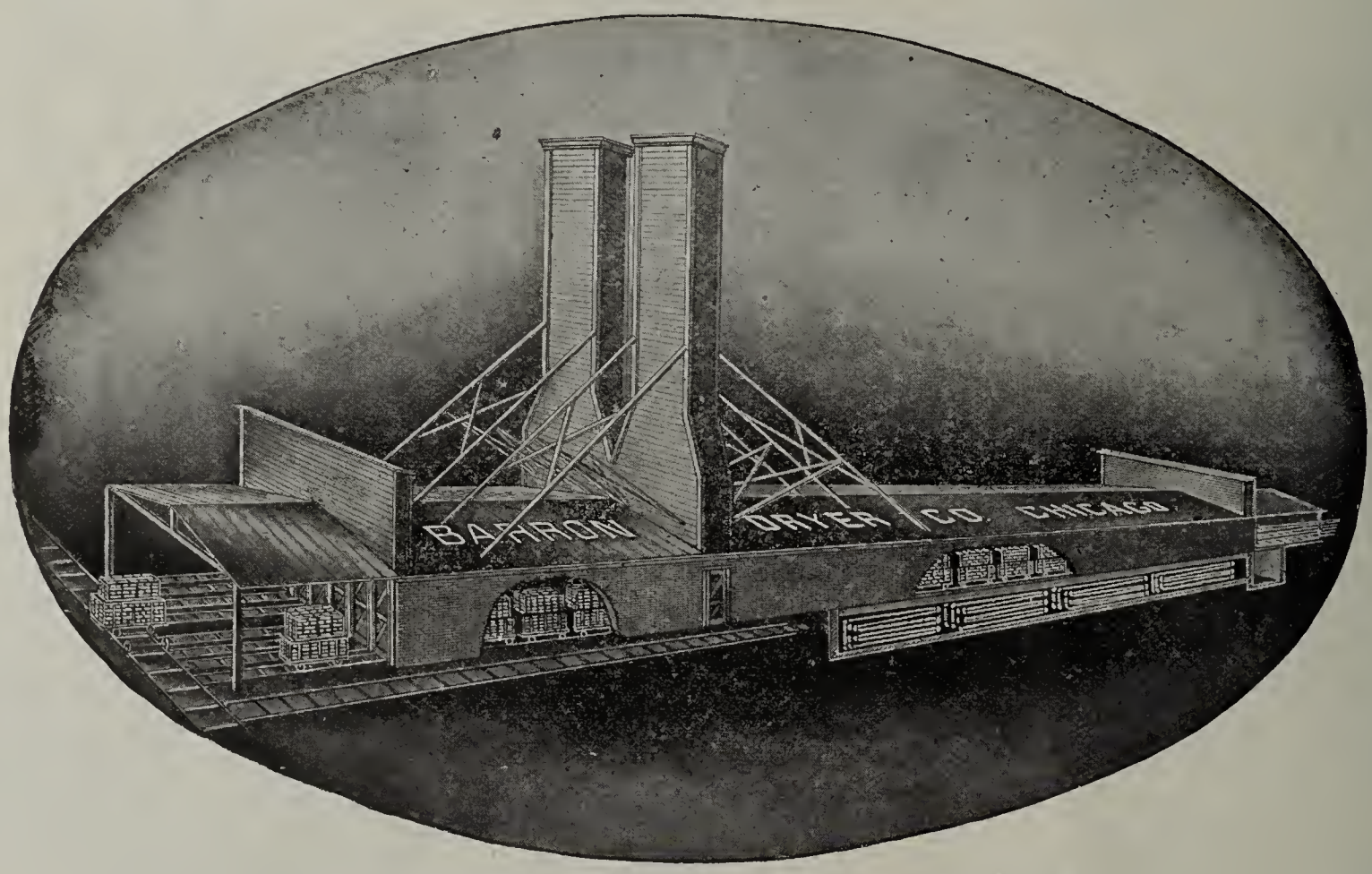

If You Are Progressive

You know that the brickmakers who are making the money in these days are those who have installed an up-to-date drying system enabling them to cope with ease with the heaviest demands of the market, their operations being uninterrupted all the year round.

This is true of them, what of your case? Why adhere still to antiquated methods subjected to weather limitations. Determine to install the most effective drying system in existence and apply for information and quotations to the

BARRON DRYER COMPANY

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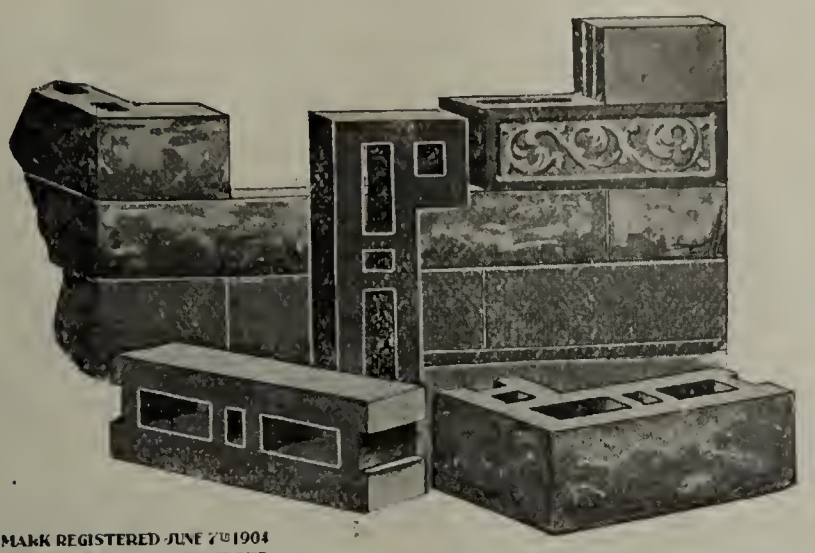

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IT IS THE BEST BY EVERY TEST

ALL OF THESE POINTS ARE COVERED BY PATENTS TO US AND NO OTHERS. FOUR PARTIES HAVE ALREADY BEEN ENJOINED BY US IN UNITED STATES COURTS FOR INFRINGING OUR PATENTS.

BECAUSE:

It makes all lengths from **four** to **thirty-two** inches.

It makes all widths from **four** to **eighteen** inches.

It makes all heights from **one** to **nine** inches.

It makes all angles for **bay-windows.**

It makes blocks of different contour by removable face plates with patented designs.

It makes **joist** blocks and **nelting-courses.**

It was invented by a **practical** builder who knew what was necessary.

Its proportion as to strength and weight are correct.

It is not a cumbersome and bungling piece of mechanism.

Every block necessary to complete system of construction made by Palmer's machine. No waste.

Don't be deceived into buying a machine just because it makes a hole in a block. This is like poison to our business.

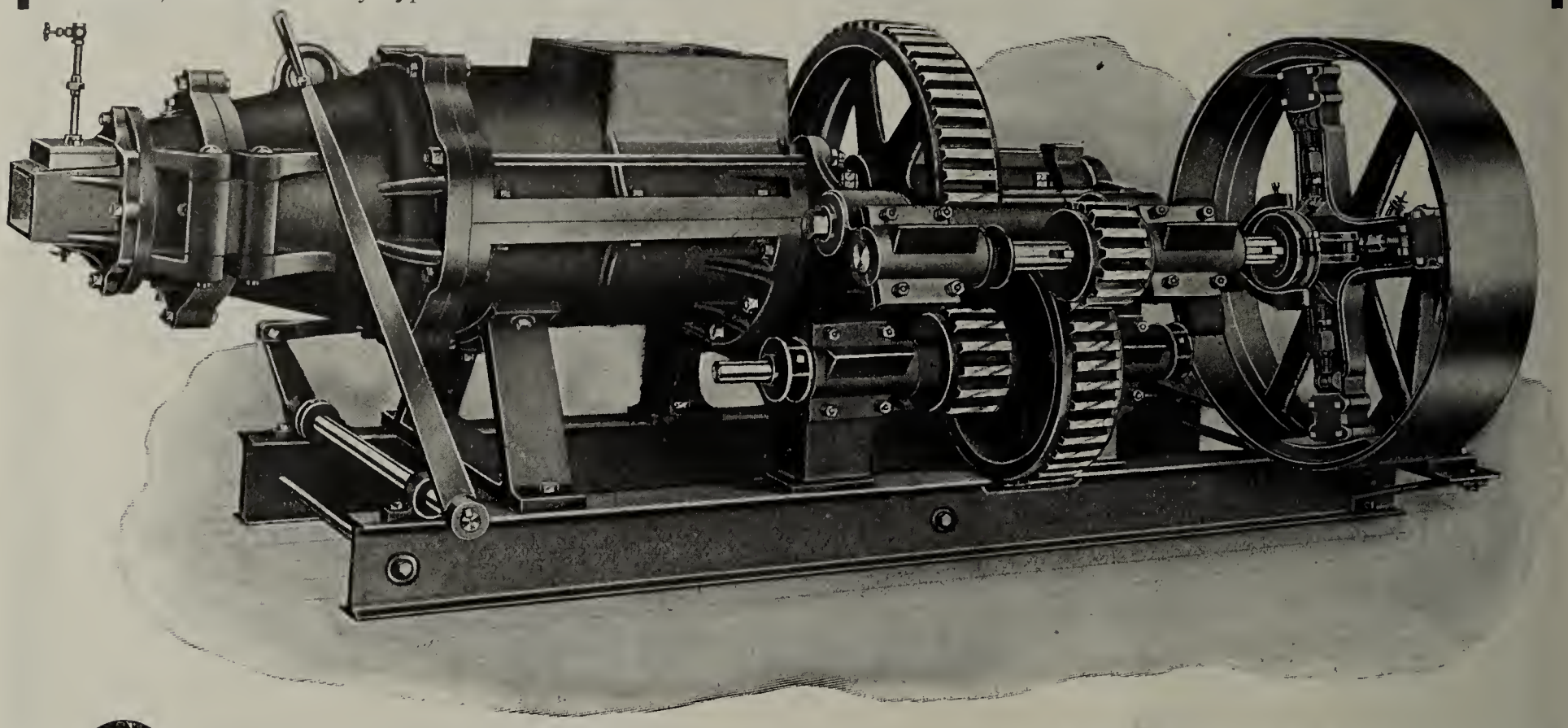
Beware of charlatans and mountebanks who know nothing of the business, but want the public's money on the reputation and success of others.

THE HARMON S. PALMER COMPANY

WASHINGTON, D. C.

STIFF MUD BRICK MACHINERY

This is our No. 2 Giant. It is equipped with Steel "I" Beams, One-Piece Gear Frame, Heavy Reinforced Flanges, Hinged Die Front, Special Iron in Auger and Knives, Steel Pinions, Shrouded Gearing with Covering, Steel Shafting, Independent and Removable, Set Nuts of Safety Type.

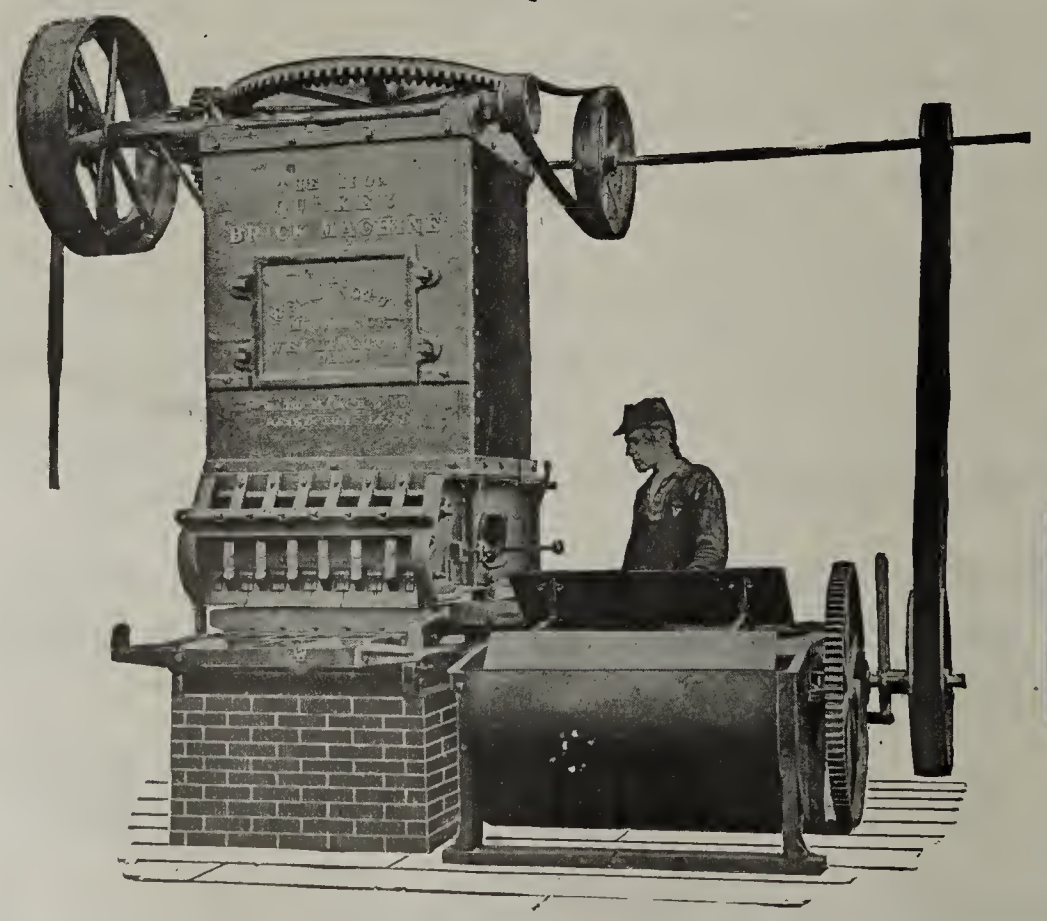


Built Right Run Right

We build other machines, larger and smaller capacity, same quality. We build everything needed to make clay products. Also Dryers that we can guarantee. Write for catalog.

THE AMERICAN CLAY MACHINERY CO.
BUCYRUS, OHIO

THE NEW IRON STEAM POWER "QUAKER"

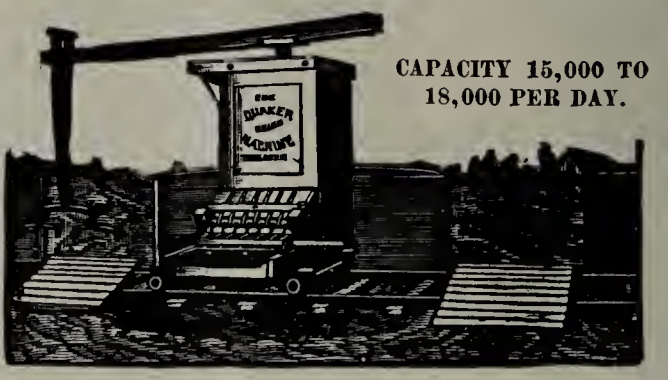


Over 500 "Quakers" in use, both Horse and Steam Power, now made entirely of Iron and Steel. I have the best, simplest and cheapest Mould Sanding Machine on the market. With my Roller-Bearing Brick Barrows you can wheel 15 per cent. more brick and do it as easily. Order one subject to approval.

ALL OTHER SUPPLIES.

Send for Catalogue.

The BEST for the least money.



CAPACITY 15,000 TO 18,000 PER DAY.

The **NEW IRON HORSE-POWER QUAKER** is indeed a model machine; it is the best machine for equipping small yards at a moderate expense that has ever been put upon the market. It is built for the attachment of steam gearing whenever desired.

It will pay you to see my new catalogue before placing your order.

JAMES W. HENSLEY, Successor to S. K. FLETCHER, **Indianapolis, Indiana.**

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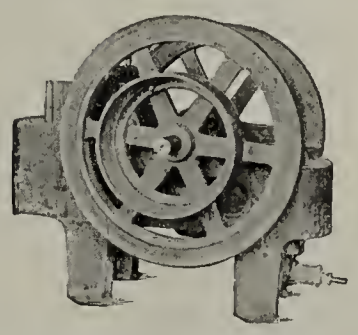
PRACTICAL
BRICK-MAKING MACHINERY

DRY OR WET PANS

MARTIN'S STYLE "A"
The Favorite Stock Brick Machine



ROCK and ORE CRUSHERS
CLAY and SHALE CRUSHERS

BRICK PLANTS
EQUIPPED COMPLETE

SCREENS—ELEVATORS
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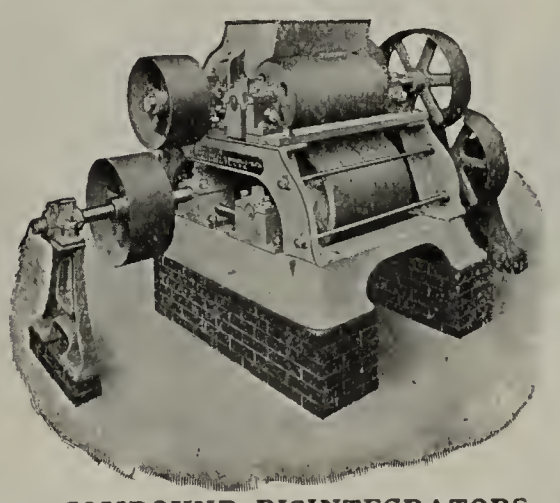
ARTIFICIAL DRYERS

WE HAVE ONE OF THE MOST SATISFACTORY AND UP-TO-DATE SYSTEMS FOR DRYING BRICK THAT HAS BEEN PLACED BEFORE THE CRAFT. WOULD YOU LIKE TO KNOW MORE ABOUT IT?



COMPOUND DISINTEGRATORS

SAND DRYERS

Write For Catalogue

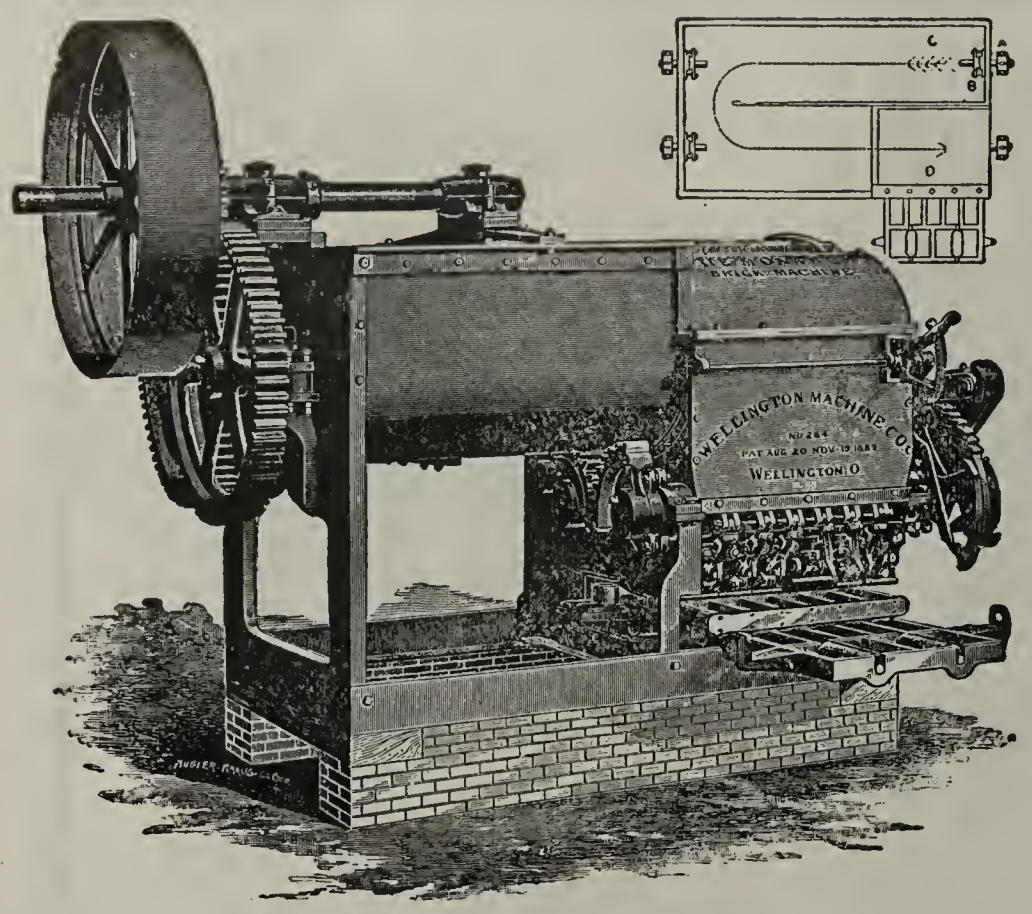
Everything You Need

BARROWS and TRUCKS

THE HENRY MARTIN
BRICK MACHINE MFG. CO. INC.

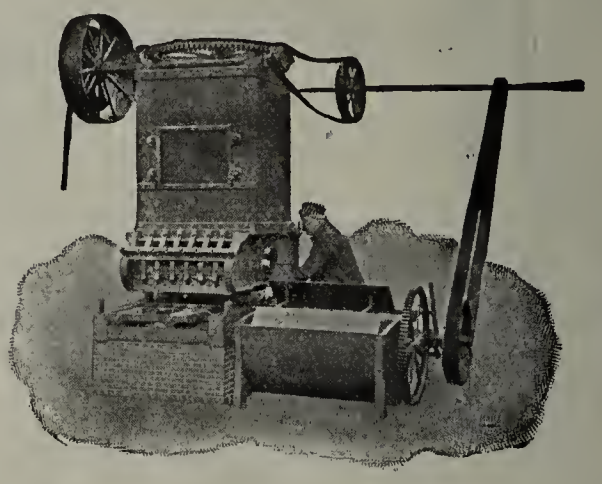
CLAY WORKING ENGINEERS
AND MACHINERY EXPERTS

LANCASTER, PA., U.S.A.



MONARCH STOCK BRICK MACHINE
Capacity, from 30,000 to 50,000

BRICK and TILE MACHINERY



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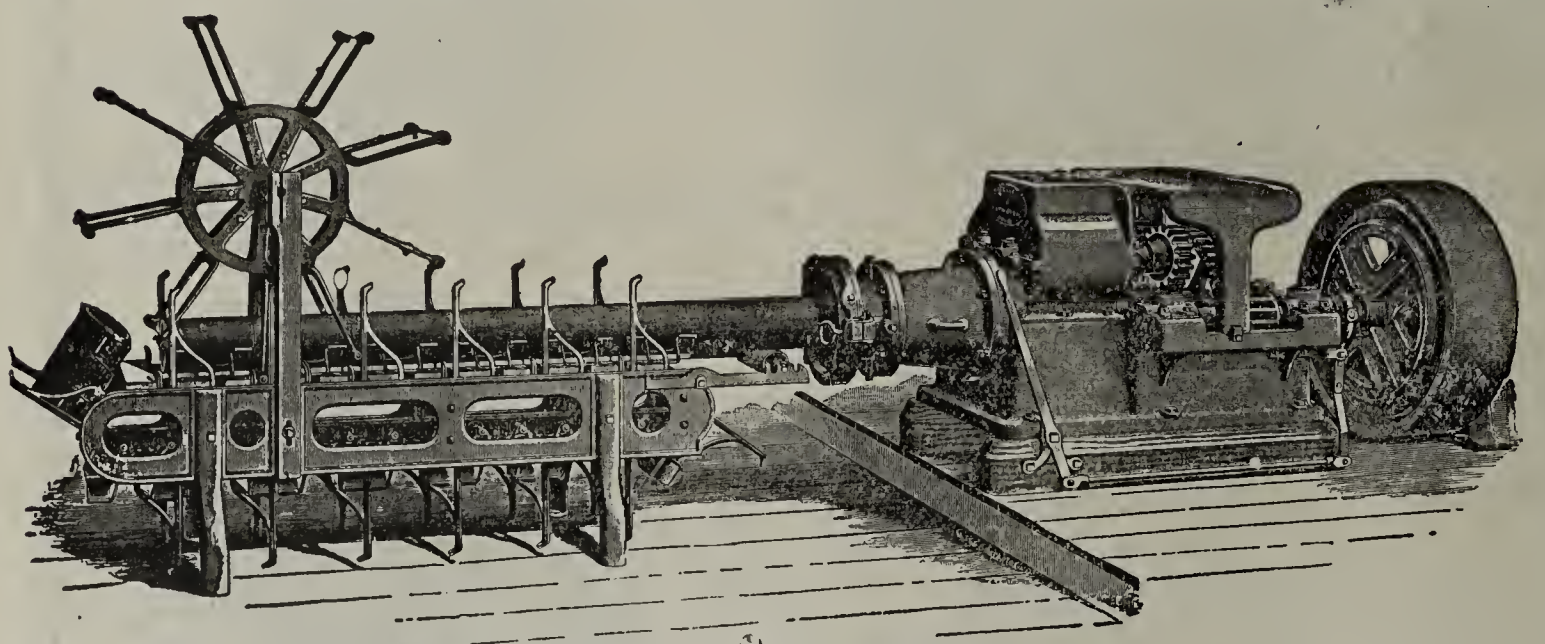
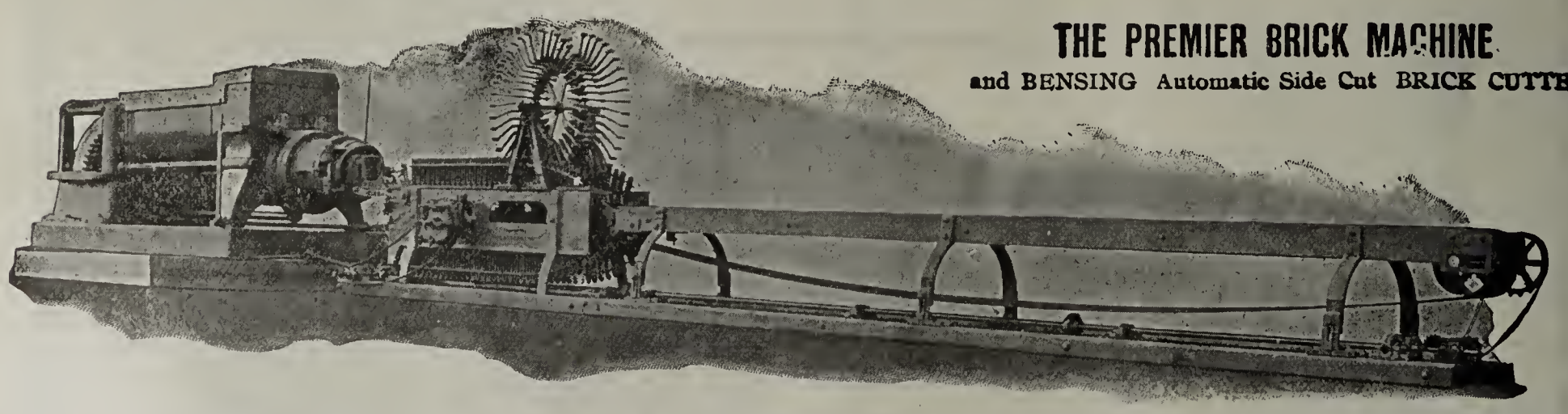
Horse or Steam Power. Capacity, 20,00 to 35,000



"We Fulfill our Guarantees."

BRICK OR TILE MACHINE, WITH AUTOMATIC TABLE

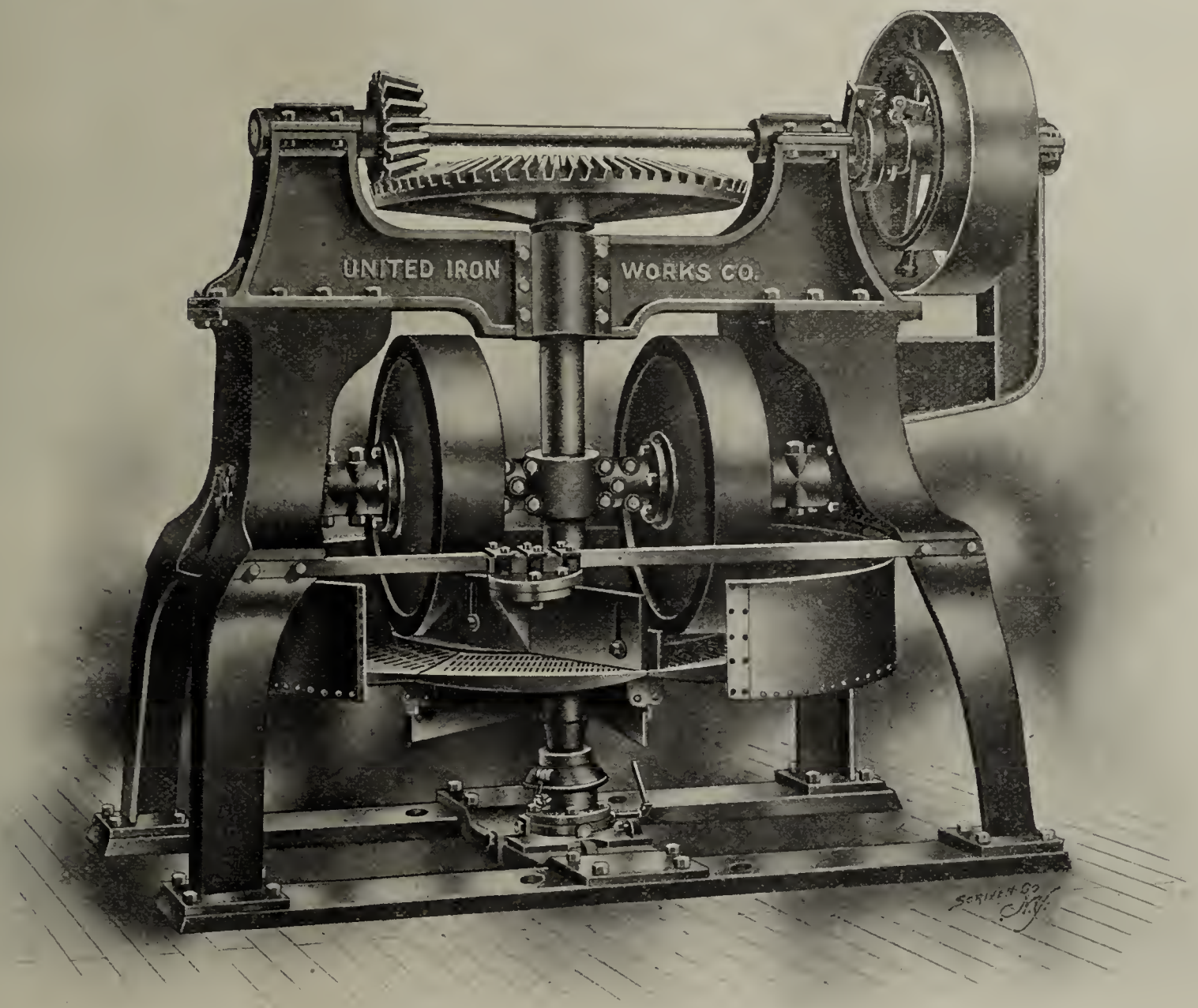


THE PREMIER BRICK MACHINE
and BENSING Automatic Side Cut BRICK CUTTER

We have a full line of Clay-Working Machinery, sand mold brick machines, auger brick and tile machines, Automatic side and end cut tables, dies, molds, barrows, trucks, sanders, represses, pug mills. *The only down cut, reel side brick cutter on the market for cutting face brick that do not require repressing.* We can guarantee to make you a better face brick with this cutter than you can get from any other cutter on the market.

B. E. LaDOW, 701 Dwight Building, KANSAS CITY, MO.

The Heaviest and Most Substantial Dry Pan on the Market



HAS stood the test of years of hard service. For use in the West the saving of freight alone over Eastern products is more than 10% of the first cost, and even this PRICE is LESS than our competitors. We also manufacture a DRY PRESS equally as good as our DRY PAN. A full line of BRICK CARS too. Repairs for all standard clay working machinery kept in stock at plant at Cherryvale, Kansas. Write us before ordering. Address all correspondence to

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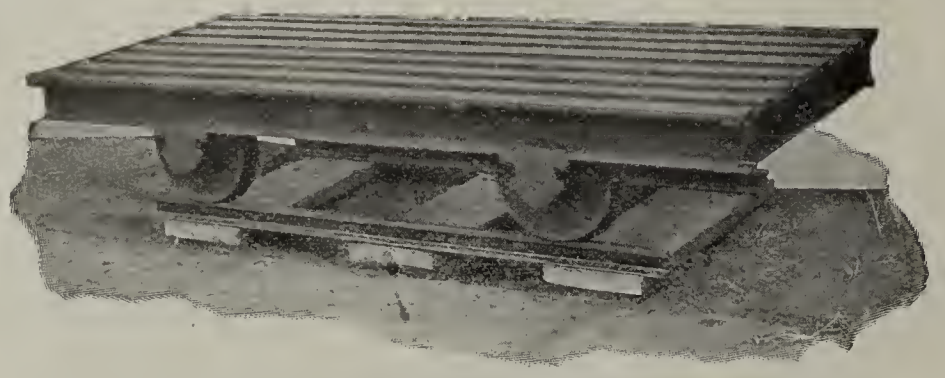

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STEEL DECK CAR, CHANNEL FRAME.
For Drying Brick, Sewer Pipe, Etc.

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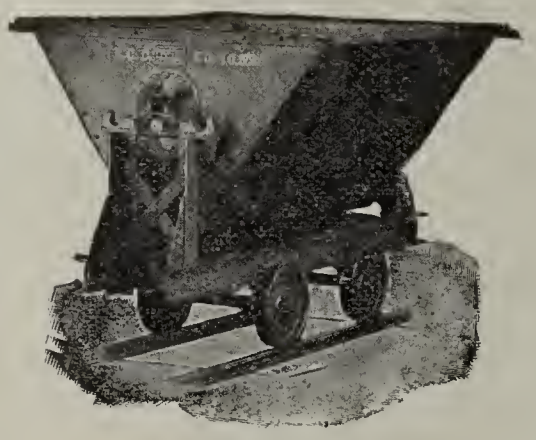
FLAT CAR, WOODEN DECK.
For Brick, Tile, Etc.



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TRUNION DUMP CAR.
For Handling Coal, Sand, Ashes, Etc.

The Cleveland Car Company

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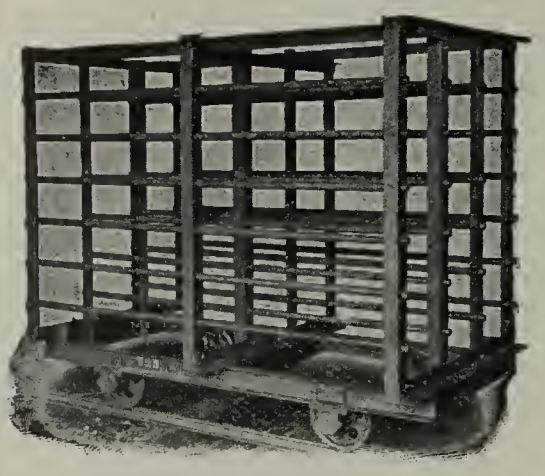
Designers and Builders of

Complete Equipment for Narrow Guage Railroads

No. 50.
ONE SIDE DUMP CAR.
For Dumping Into Dry Pans, Disintegrators and Crushers.



No. 523.
RACK CAR, HEAVY TYPE.
For Use With Coke Oven, Furnace and Cupola Block.

Dryer Cars of Every Description, Dump Cars, Turn Tables, Transfer Cars, Switches, Frogs, Rails, Etc.

Overhead Trolleys, Kiln Doors, Furnace Fronts, Grate Bars and Brick Barrows : : : :

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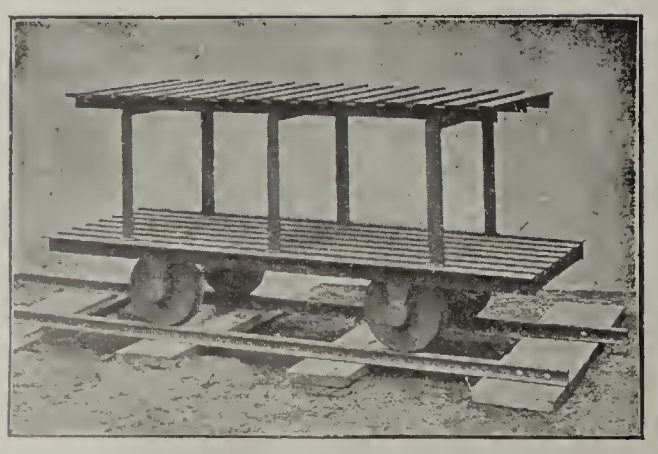
END DUMP CAR.
Adapted to Handling Coal, Shale, Sand, Etc.



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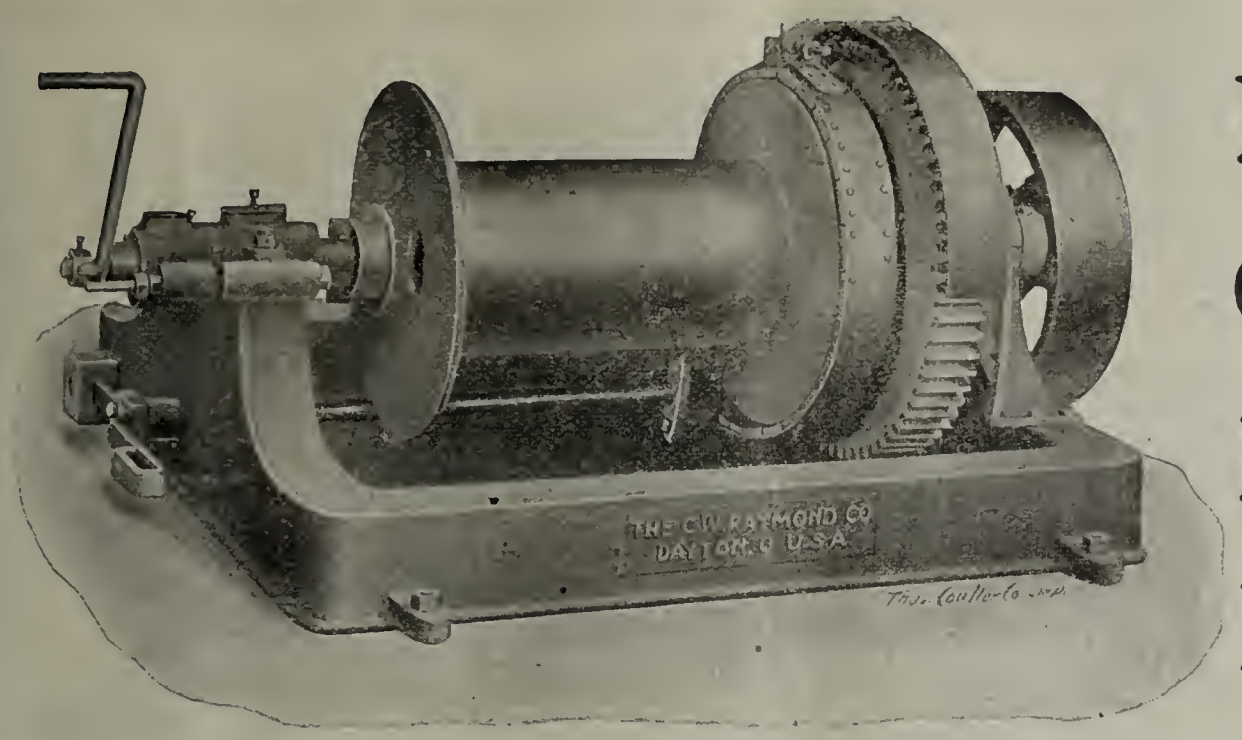
DOUBLE DECK CAR, STEEL DECKS.
For Brick, Tile, Fire-Proofing, Etc.

No. 245A.
DOUBLE DECK CAR, WOODEN DECK.
For Brick and Other Clay Products.



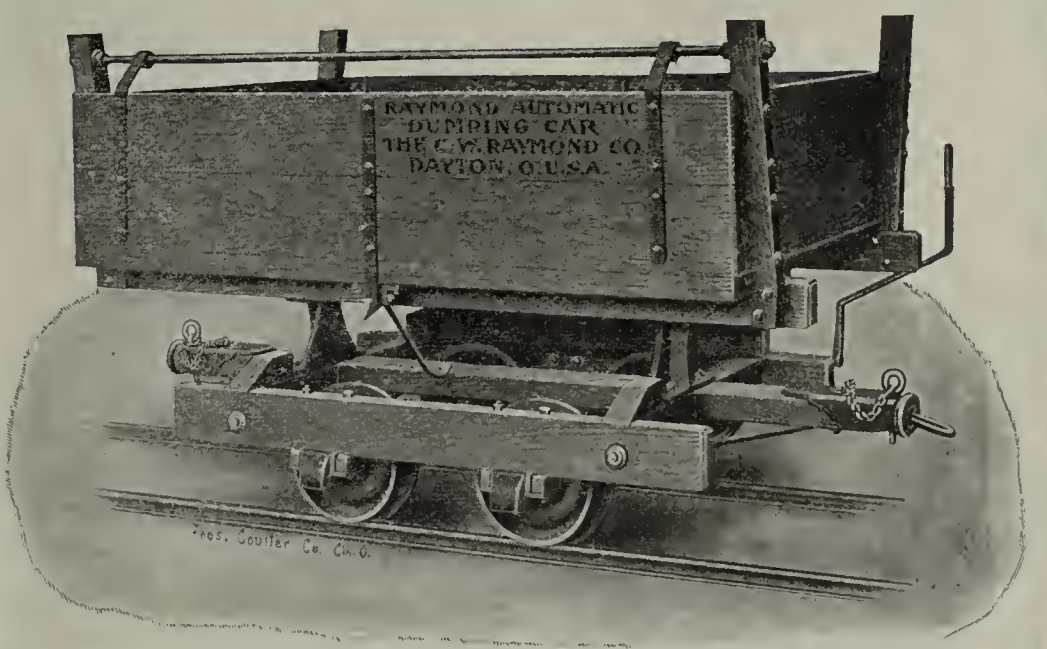
Raymond Gear *and* Friction Hoist

Can also be furnished bevel geared or direct connected with a

Ten Horse-Power Verticle Engine

Installation inexpensive. Cost of operation less than by any other method. Both Labor and Time Saved. No repairs to pay for. Our Engineers can design a hoist and car system of haulage to meet your individual requirements.

Raymond Automatic Dumping Cars :::



Absolutely automatic. Is dumped by striking a trip bar on the track. Car both dumps and resets itself. A positive time and money saver. Made either side or end dump.

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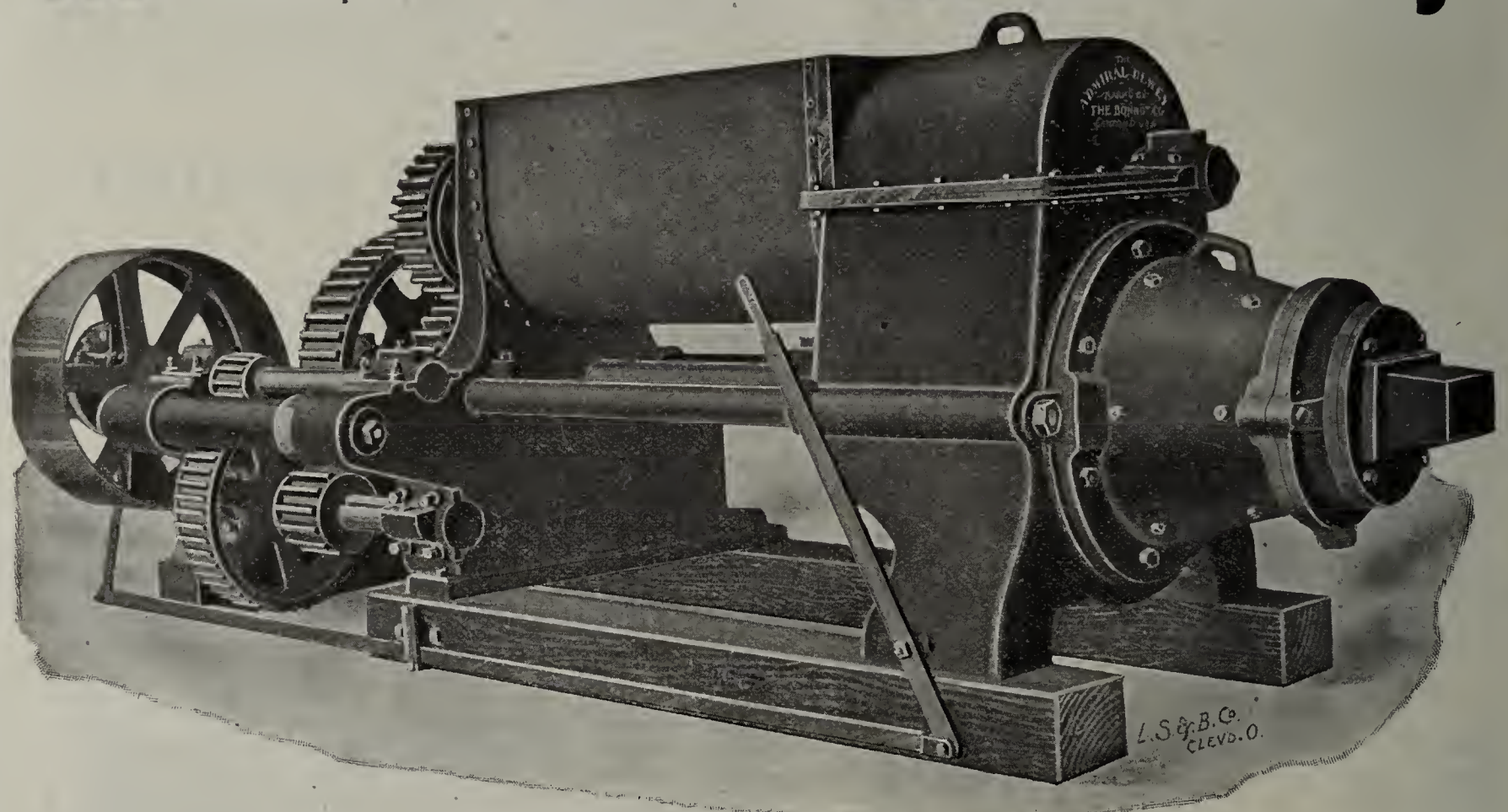
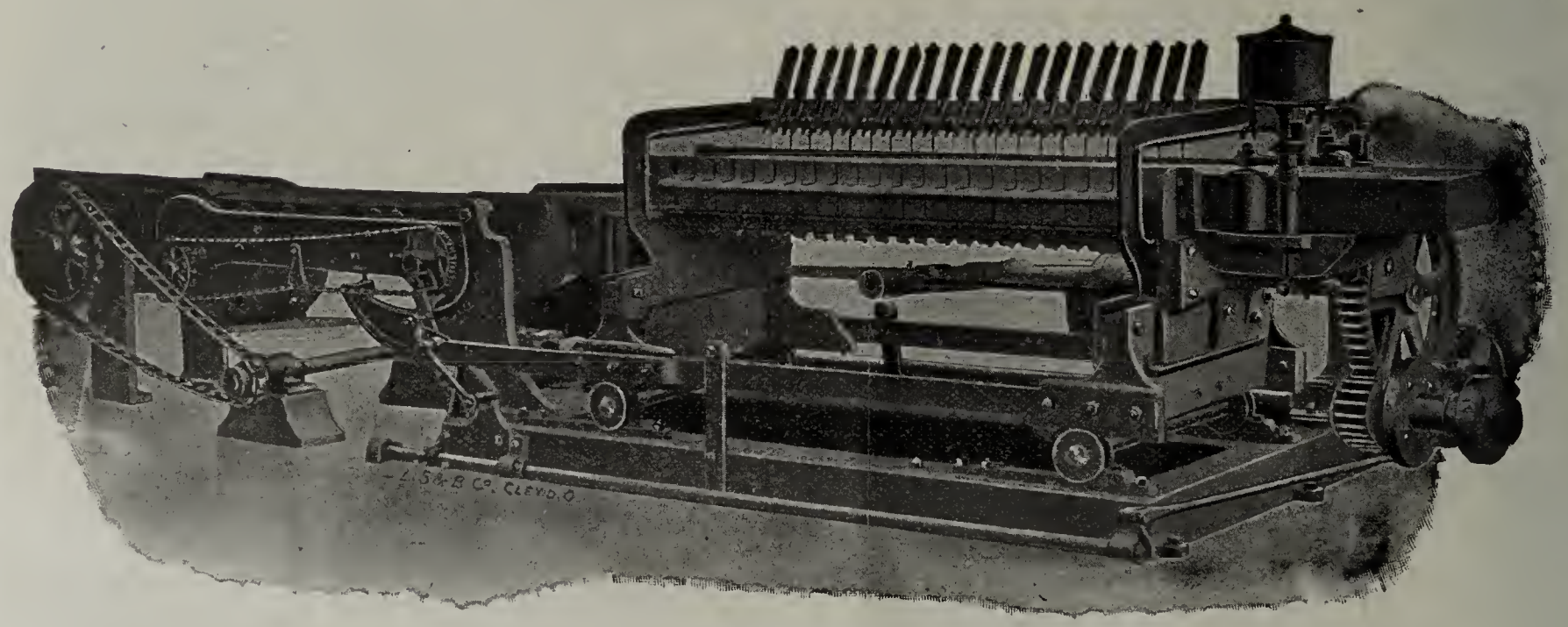
Modern Brick Machinery



SPECIAL COMBINED BRICK MACHINE AND PUG MILL 100,000 daily capacity.
AUGER BRICK MACHINES 10,000 to 100,000 capacity, five sizes.



AUTOMATIC SIDE CUT TABLE. Simple, positive, durable.

COMPLETE EQUIPMENTS FOR BRICKMAKERS. *ASK FOR CATALOGUE*

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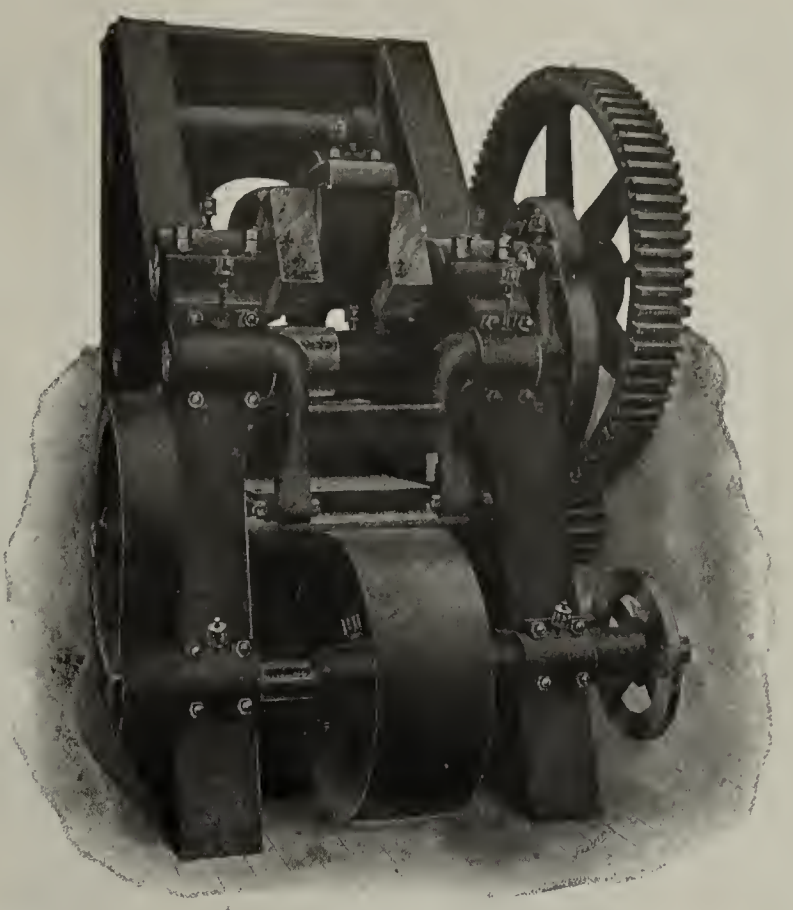
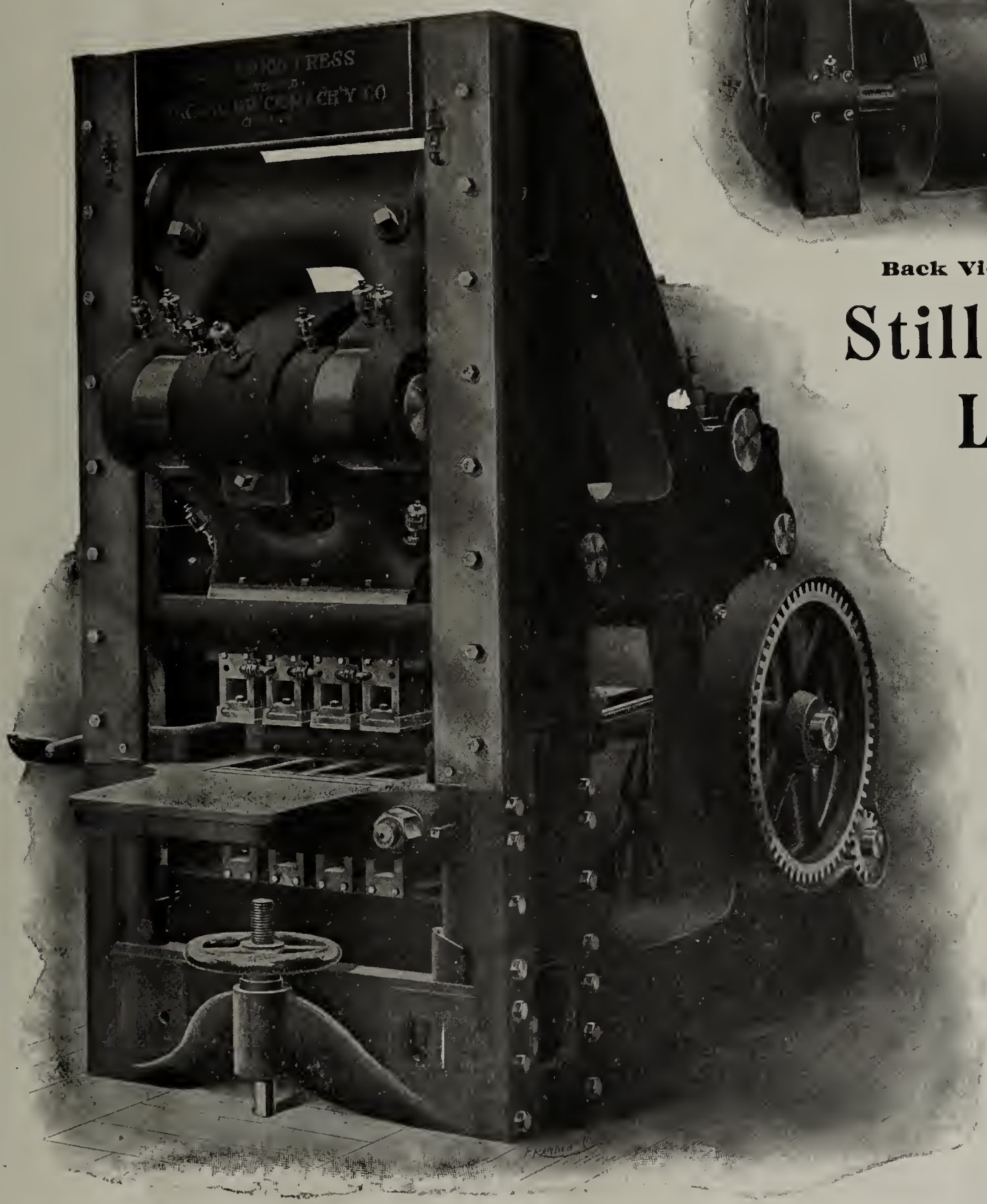
NEW MODEL BERG BRICK PRESS



Back View.



Still in the Lead

AND

One Step Further Forward

Even stronger than ever and all self-contained. Greater pressure and fewer working parts than any other machine. Simple, massive, compact. Running mechanism placed in rear, as shown in upper cut, enabling this machine to be SHIPPED IN ONE PIECE.

MANUFACTURED BY

ANDERSON FOUNDRY & MACHINE WORKS

Anderson, Indiana.

SOLD BY

CHICAGO BRICK MACHINERY COMPANY

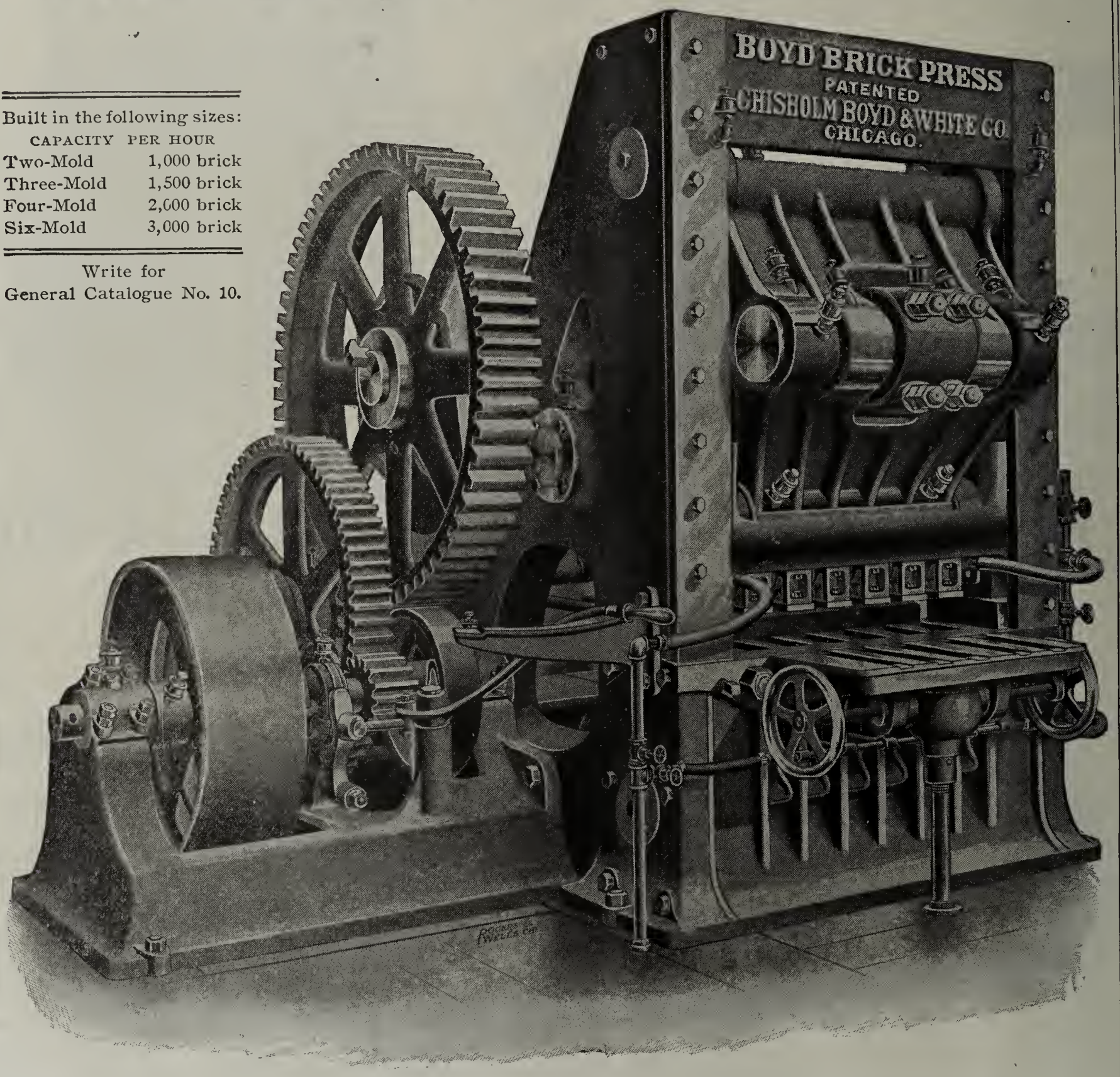
77 Jackson Boulevard, Chicago.

The Boyd Brick Press

Built in the following sizes:

CAPACITY	PER HOUR
Two-Mold	1,000 brick
Three-Mold	1,500 brick
Four-Mold	2,000 brick
Six-Mold	3,000 brick

Write for
General Catalogue No. 10.



Another Record for the Boyd Press:

Six of our SIX-MOLD PRESSES in use on ONE YARD since 1892. Average cost of repairs for each machine One Dollar per year.

THE BOYD PRESS has always been distinguished for originality in design and construction. It will make better brick from clay or shale than can be made from the same material by any other press. It is selected and purchased by the most progressive Brick Makers. The largest and most successful brick plants in the country are using Boyd Presses.

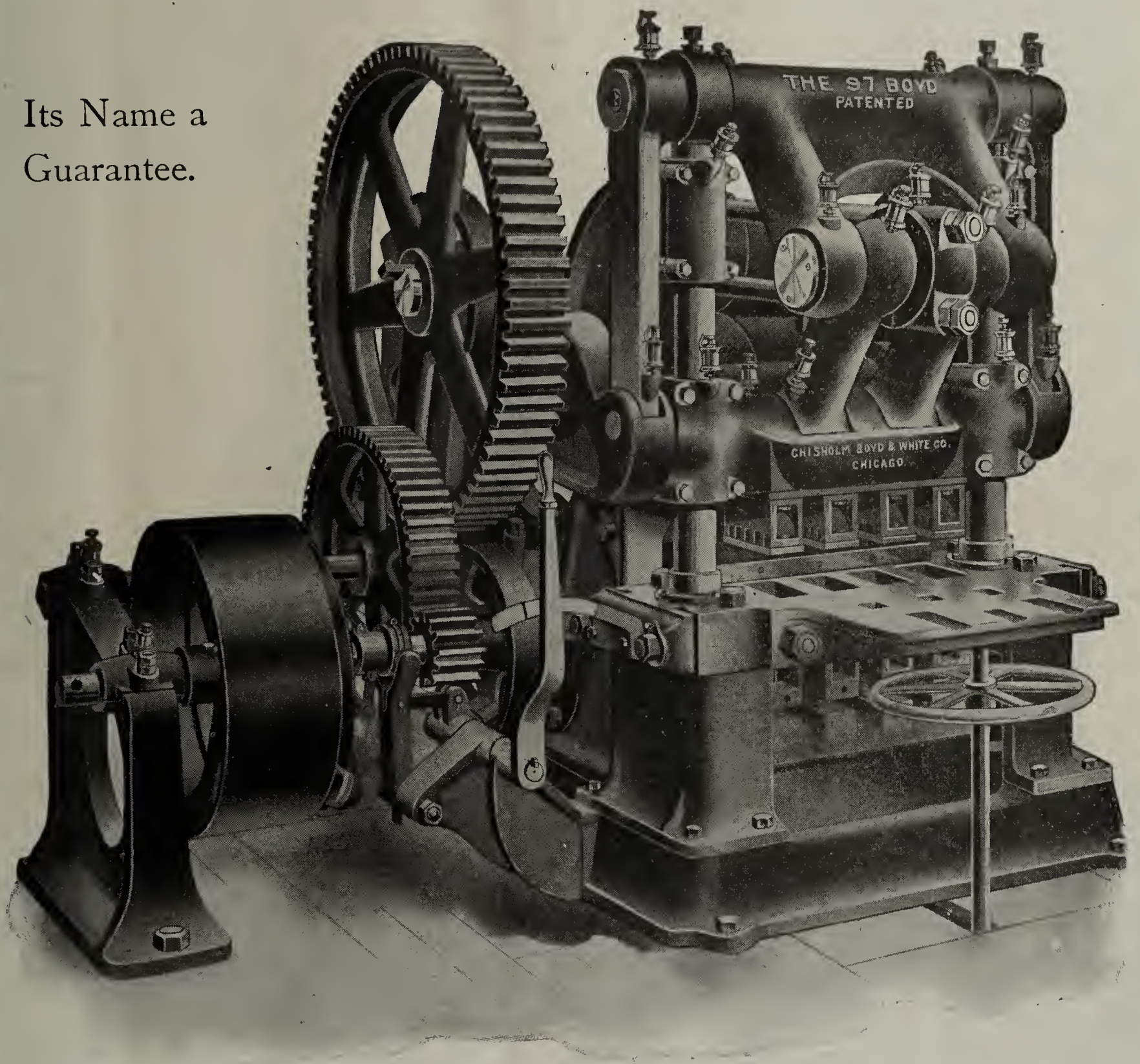
Chisholm, Boyd & White Company

Office and Works, 57th and Wallace Sts. **CHICAGO, ILL.**

The Boyd Brick Press

The '97 Model

Its Name a Guarantee.



THE '97 MODEL BOYD BRICK PRESS has enormous strength and great durability; it is compact; the adjustments are convenient; it operates quietly and smoothly; the workmanship and material are of the best; the design ingenious, and shows the most perfect application of scientific and mechanical principles to the art of brickmaking.

THE BOYD is the only Brick Press provided with an independent adjusting device for regulating the amount of clay in the molds and the pressure on the brick. This feature positively ensures equal pressure and finish on both sides of the brick, and no granulated or soft centers.

Sent on trial and fully guaranteed. Seventy presses of this pattern now in use. Cannot be broken in pressing brick. Write for descriptive catalogue No. 9.

Chisholm, Boyd & White Company

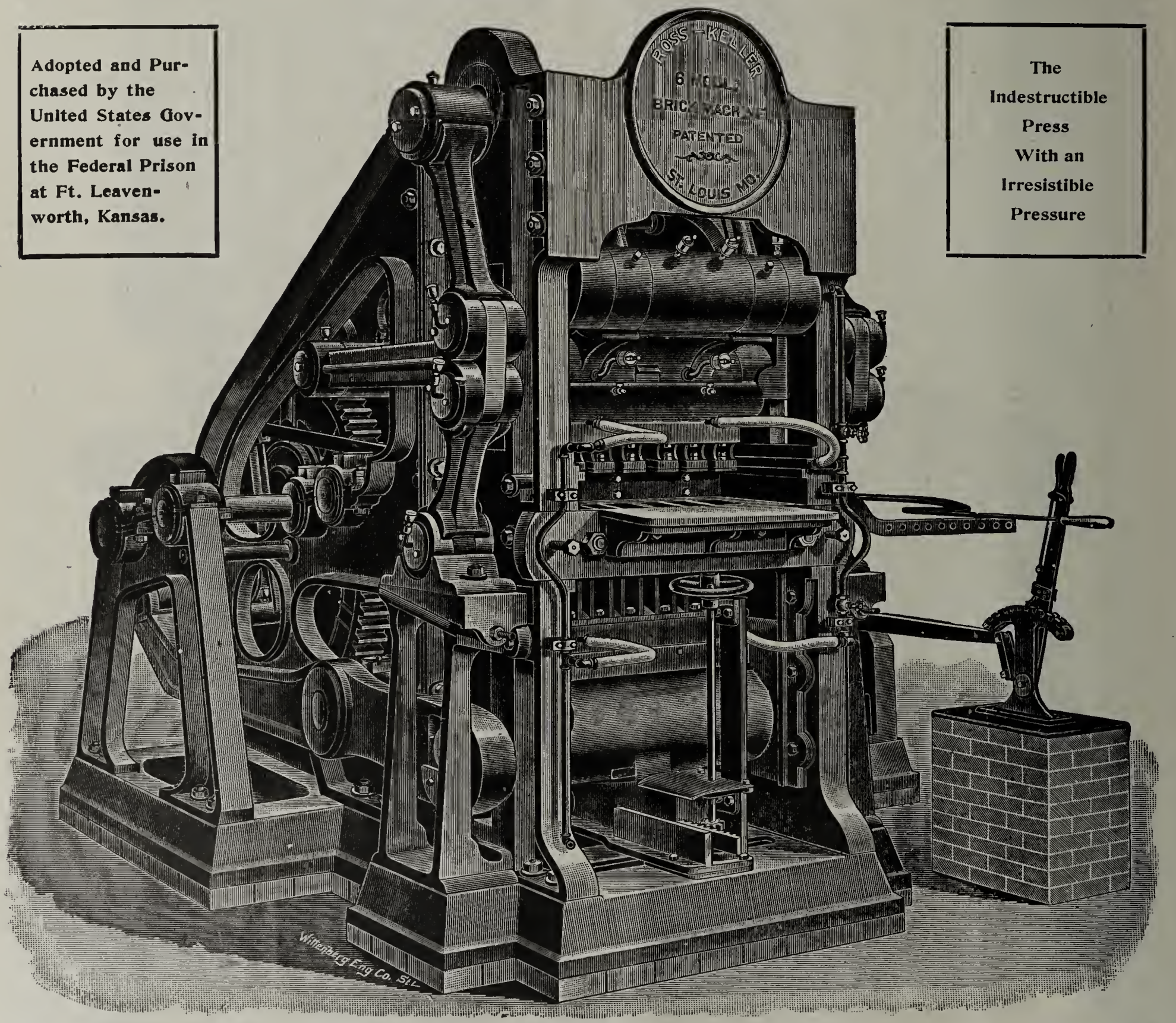
Office and Works, 57th and Wallace Sts. **CHICAGO, ILL.**

SAND-LIME BRICK MACHINERY

We are building and equipping Sand-Lime Brick Plants complete and we guarantee satisfactory results : : :

We manufacture a full line of Clay & Shale Dry Press Machinery : : : : : : :

Adopted and Purchased by the United States Government for use in the Federal Prison at Ft. Leavenworth, Kansas.



The Indestructible Press With an Irresistible Pressure

For prices and particulars address

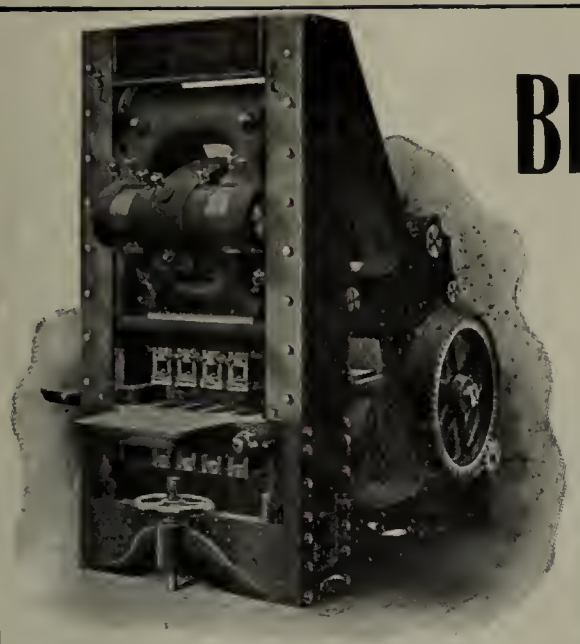
Ross-Keller Triple Pressure Brick Machine Co.

GEO. M. McDOWELL, Sales Agent
for Pacific Coast, Portland, Ore.

FULLERTON BUILDING, ST. LOUIS, MO., U. S. A.

BERG BRICK PRESS

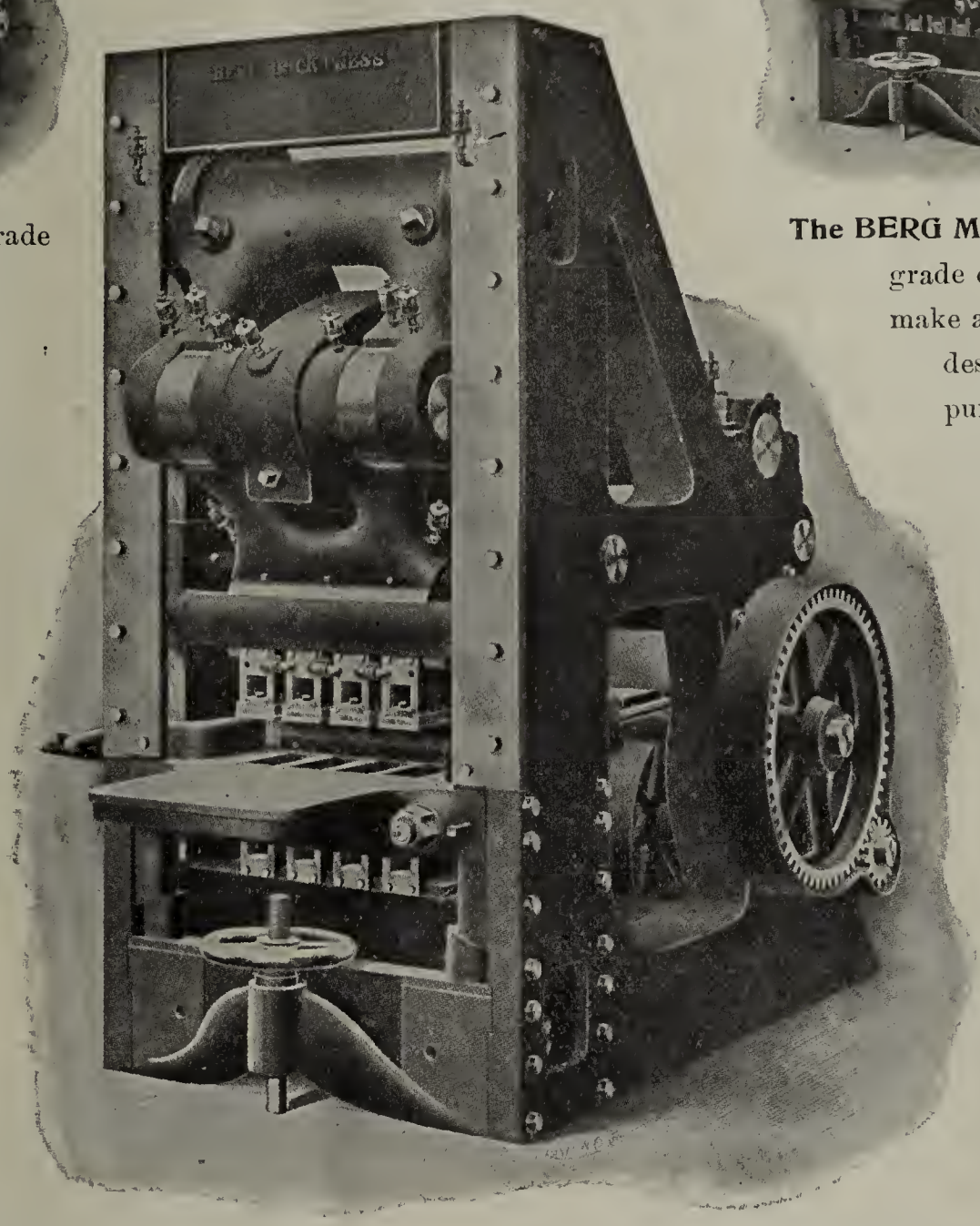
The highest development of the Art of Brickmaking Machinery so pronounced by the United States Government.

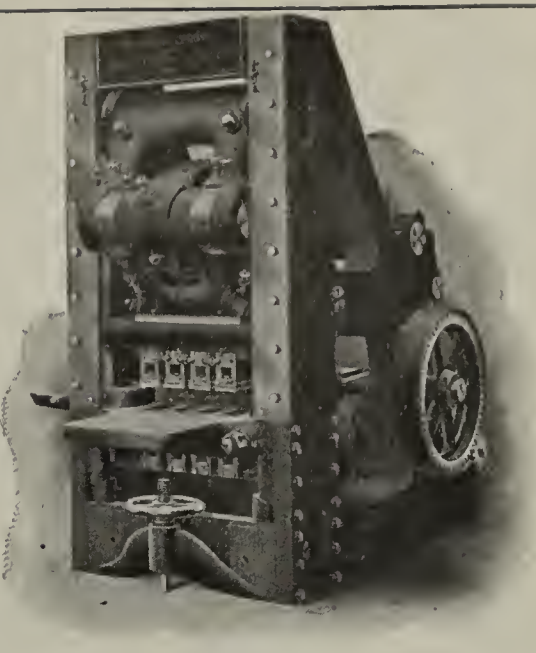


The BERG for the highest grade of pressed brick of shale or clay. It makes all kinds of shapes and sizes of brick. Changes from one shape to another can be made in less than an hour's time.

First-Class Workmanship. Cut Gearing. Fully Warranted.

The BERG makes the best sand-lime brick and cheapest because it is the strongest machine and gives the highest pressure. Thirty-five sand-lime plants in United States use the **BERG** Brick Press SUCCESSFULLY.





The BERG MAKES the highest grade of fire brick. Can make all kinds of shapes desired for fire-brick purposes.

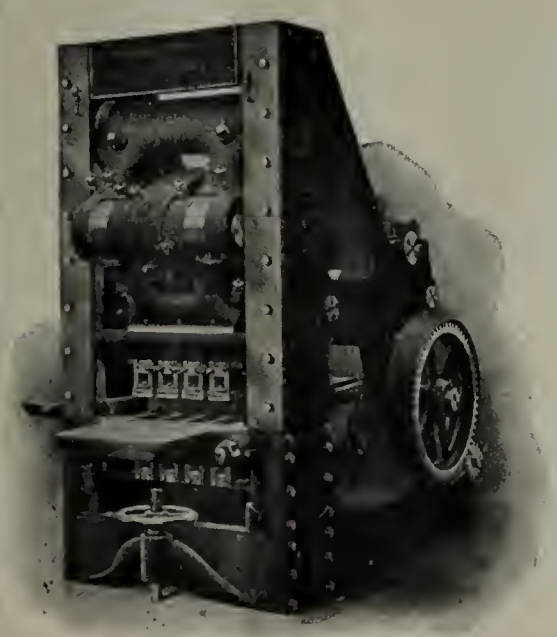
Three distinct pressures make the brick evenly pressed all through. No granulated centers of the brick.

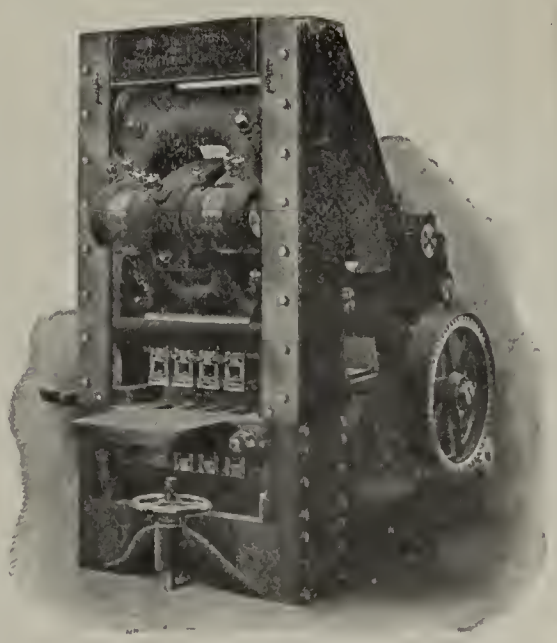
The BERG is the best for sand and cement because of its strong pressure. Uses less cement, makes cheaper brick.

The 1905 Berg Press

Many other steps further forward in improvement and highest grade of material and workmanship, also cut gearing. Fully guaranteed as to its success. Manufactured by its inventor in Toronto, Canada, at the Bertram Engine Works Co. Plans and specifications on the different kinds of plants furnished, also all equipments.

For prices and full particulars, address





A. BERG

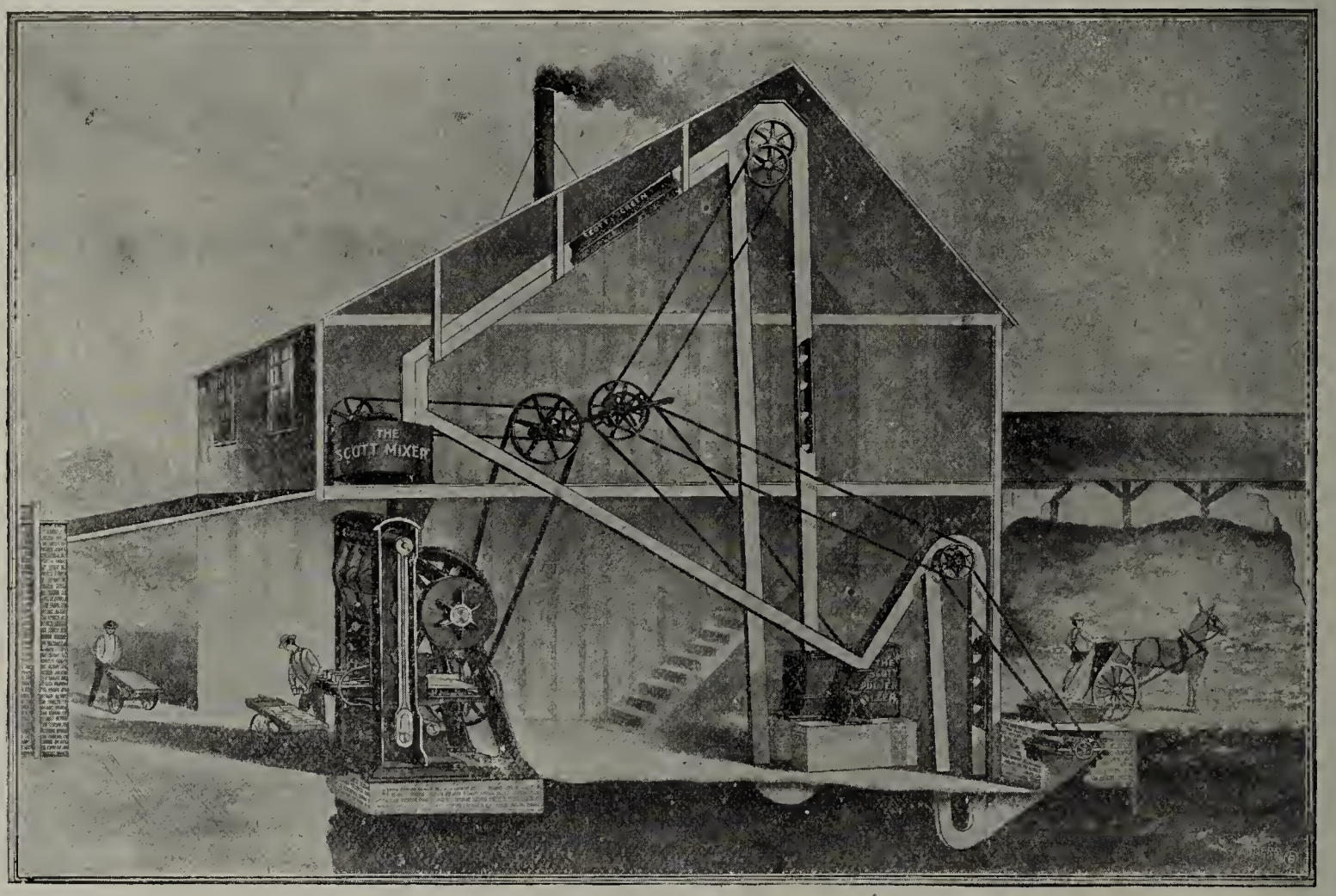
THE BERTRAM ENGINE WORKS

Toronto, Ontario, Canada

Rojestvensky

certainly was unfortunate, for while he had the knowledge of tactics within himself he was not backed up with the necessary *equipment, enthusiasm, organization.*

In waging our war against competition we claim that in our campaign we know that our facilities for manufacture are the very best; our organization is practically complete, and our enthusiasm—well, you can't imagine how strong that is unless you are operating an Andrus Press.

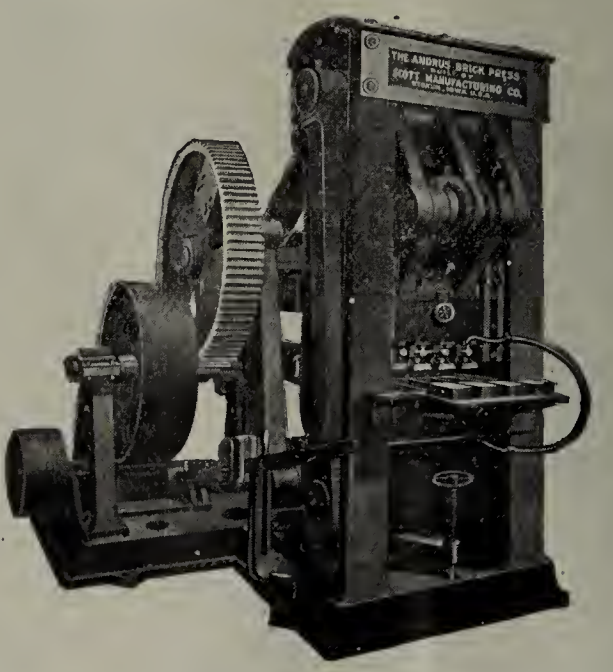


THE SCOTT NOISELESS PLANT.

We Install Complete Plants

Our Drafting Department Is At Your Service.

We cordially invite the brickmaker and capitalist to come to our city and see our presses in operation in the "St. Louis District," which is conceded to be the greatest Dry Press center in the world.



THIS IS THE PRESS THAT SCOTT BUILDS.

SCOTT MANUFACTURING CO.,

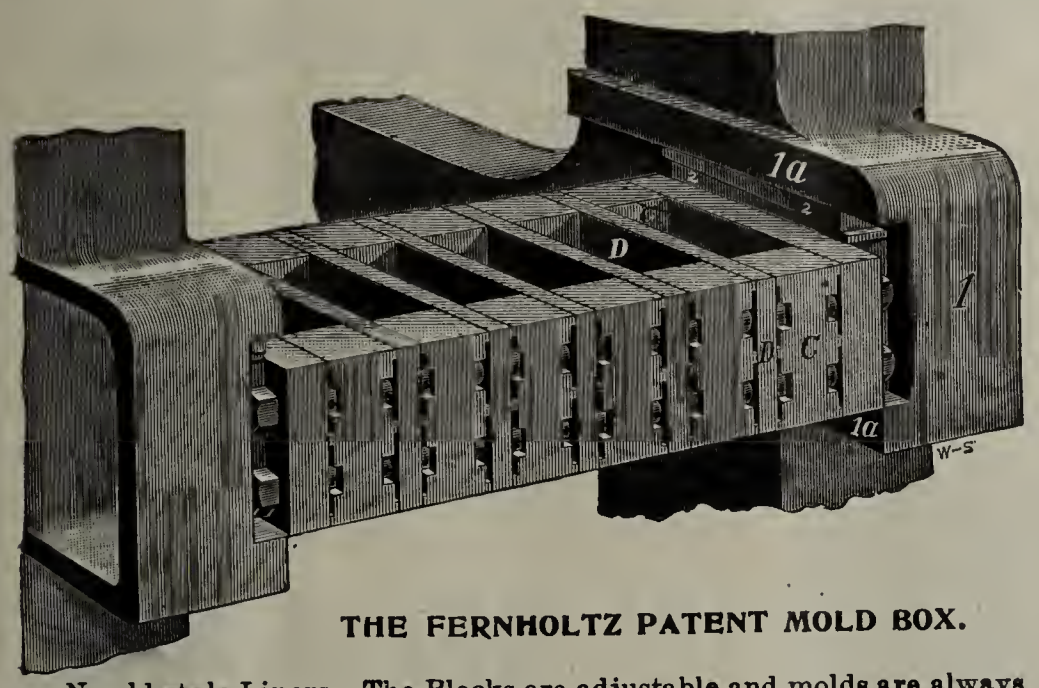
Commonwealth Trust Building, Saint Louis, Missouri.

The Fernholtz Brick Machinery Co.

Manufacturers of

The Celebrated Fernholtz Dry Press

Four mold Press 20,000 daily capacity. Six mold Press 30,000 daily capacity

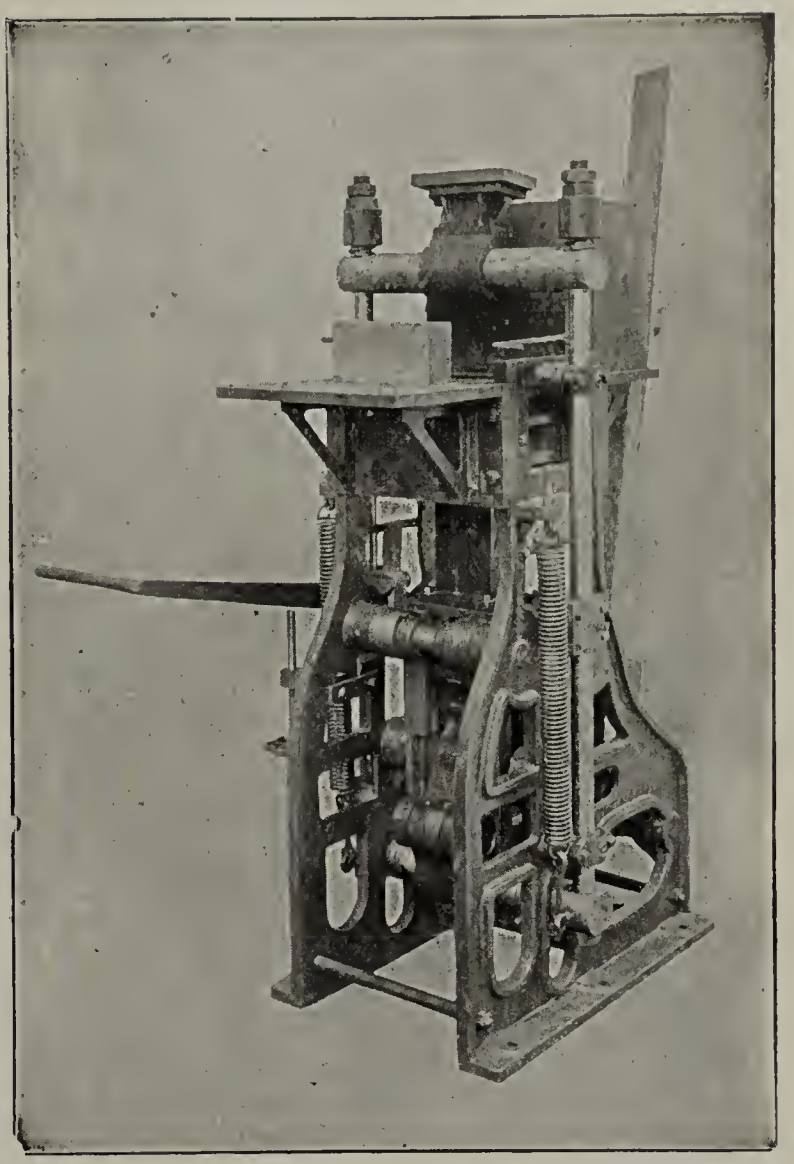


THE FERNHOLTZ PATENT MOLD BOX.

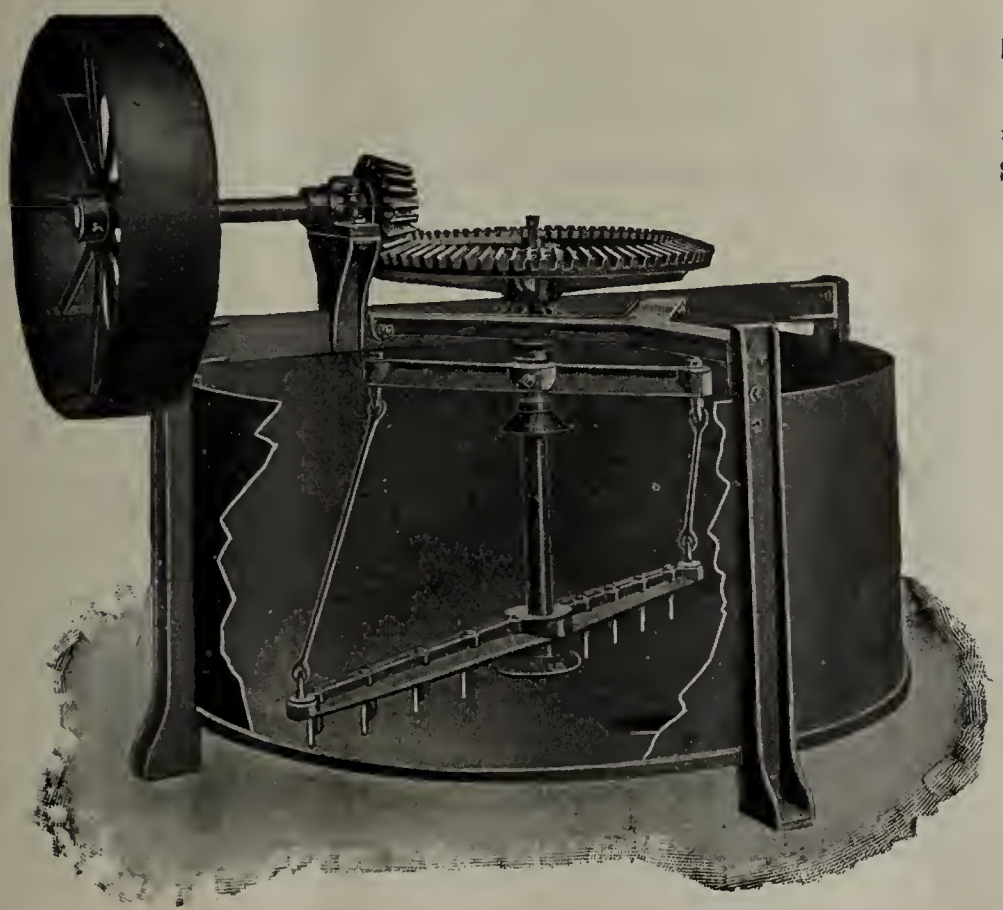
No old style Liners. The Blocks are adjustable and molds are always one size. We have put them in most all makes of Dry Press machines. Easily and quickly adjusted. They are made entirely out of chilled iron, the hardest known metal.

GRATH PATENT HAND POWER PRESS.

Especially adapted for ornamental designs Any size brick up to 12⅝ inches long, 10 inches wide and 4¼ inches thick.
Brick set into kiln direct from press.



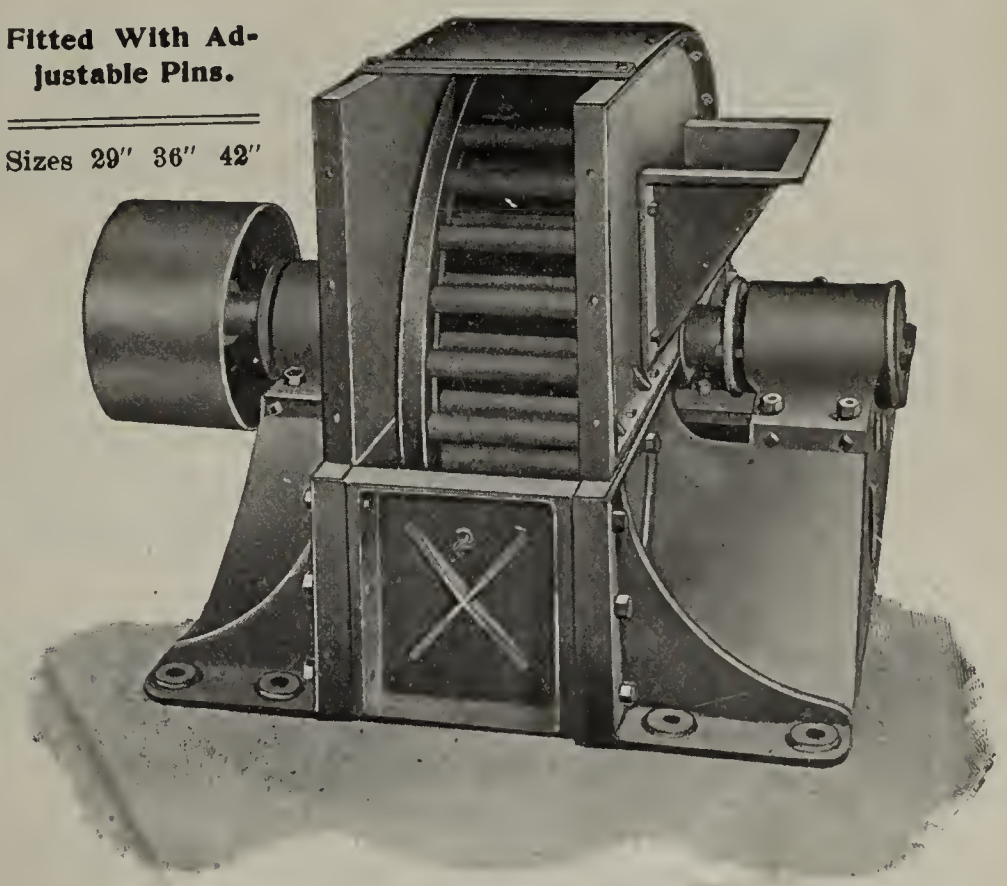
GRATH PATENT HAND POWER PRESS.



A GOOD MIXER IS ALWAYS APPRECIATED.

Fitted With Adjustable Pins.

Sizes 29″ 36″ 42″

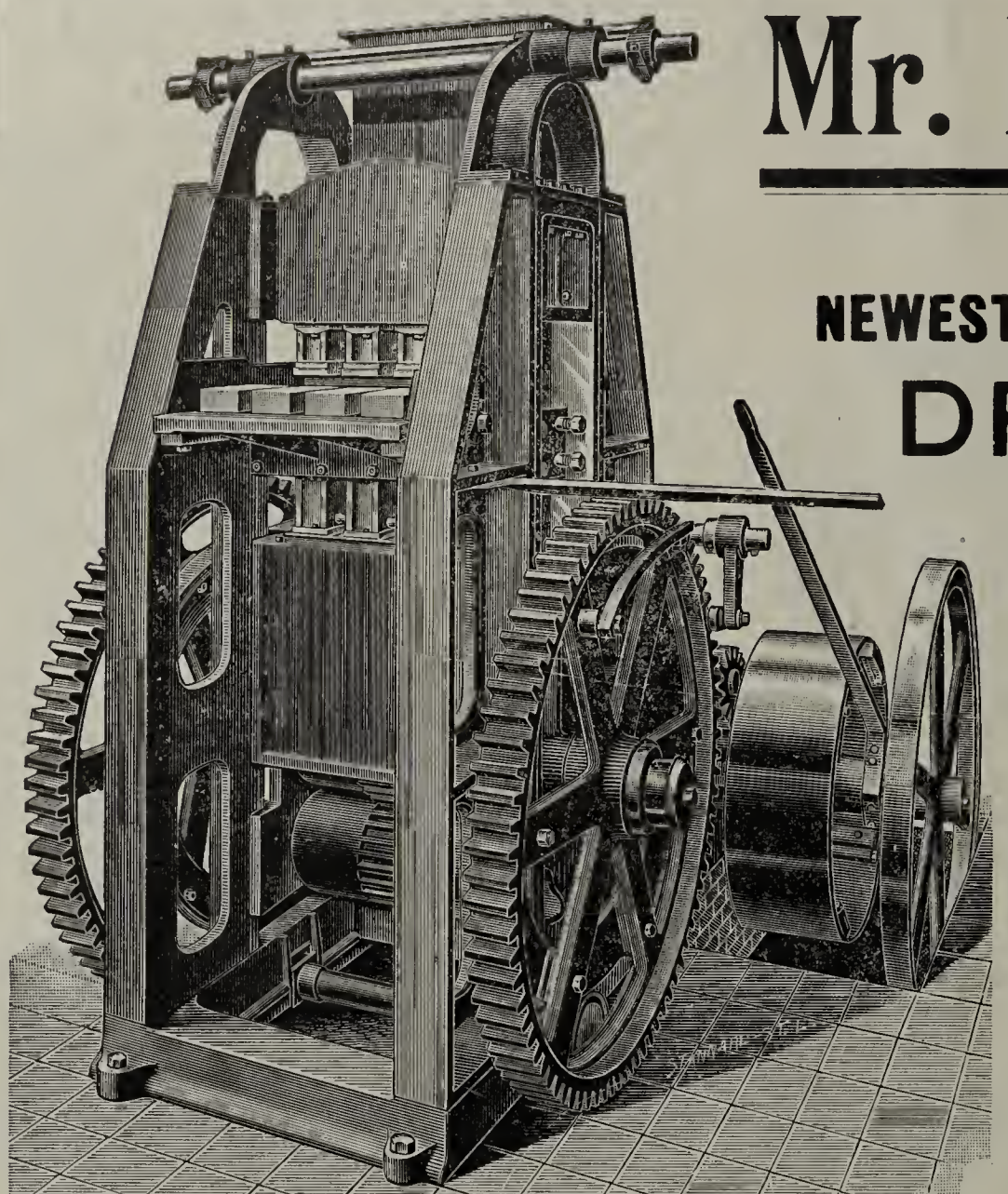


THE FERNHOLTZ CLAY PULVERIZER.

The Fernholtz Brick Machinery Co.

Cable Address "Fernbrick." Western Union Code.

Boyle Avenue and Old Manchester Road, ST. LOUIS, MO., U. S. A.



Mr. Brickmaker

Are you looking for the

NEWEST, BEST AND CHEAPEST IN

DRY-PRESS BRICK MACHINES?

If so, you cannot afford to overlook the strong points of excellence and the remarkable **simplicity, strength** and **efficiency** fonnd in

THE RELIANCE

"The Machine with a Future"

Radical departure from old principles.

Unique in construction, sound in principle, unrivaled in attainment!

Makes not only Brick but Money

A FEW POINTS:

1. Weight and Floor Space about one-half that of any other Brick Machine.
2. Compression of Clay Perfect and Uniform. (Entirely new Principle).
3 Every Brick is a Face Brick. There are No Granulations.
4. Adjustment permits any pressure desired (A Feature peculiar to the **RELIANCE.**)
5. Cheapest because having fewest parts. (Also cheapest to keep in repair).

EMINENTLY PRACTICAL AND ECONOMICAL

WRITE TO-DAY FOR PARTICULARS. SEND CLAY FOR SAMPLE BRICKS.

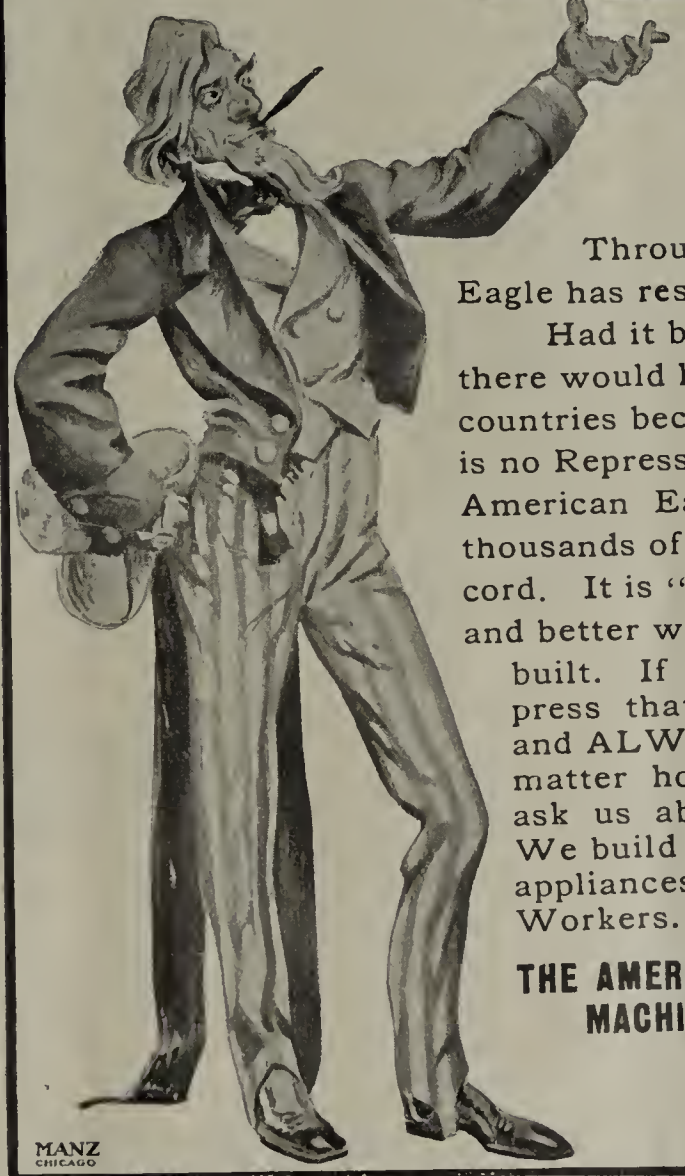
Made By the

RELIANCE MACHINE AND TOOL WORKS

ST. LOUIS, MO.

Peace Restored

"I Swan: another triumph for the AMERICAN EAGLE"



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CHICAGO

The American Eagle

Through the help of Uncle Sam the American Eagle has restored peace between Russia and Japan.

Had it been a question of the merits of Represses there would have been no argument between the two countries because both Russia and Japan concede there is no Repress in the world which will compare with the American Eagle. In this opinion Uncle Sam and thousands of his Clay Working sons are heartily in accord. It is "Built Right and Runs Right." Does more and better work with less repairs than any other press built. If you want a Repress that is best NOW, and ALWAYS will be, no matter how you work it, ask us about the Eagle. We build all machines and appliances needed by Clay Workers.

THE AMERICAN CLAY MACHINERY CO. Bucyrus, O. U. S. A.

SEWER PIPE MACHINERY

PRESSES AND DIES

I. E.

TRAP DIES

CLUSTER TILE DIES

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COPING DIES

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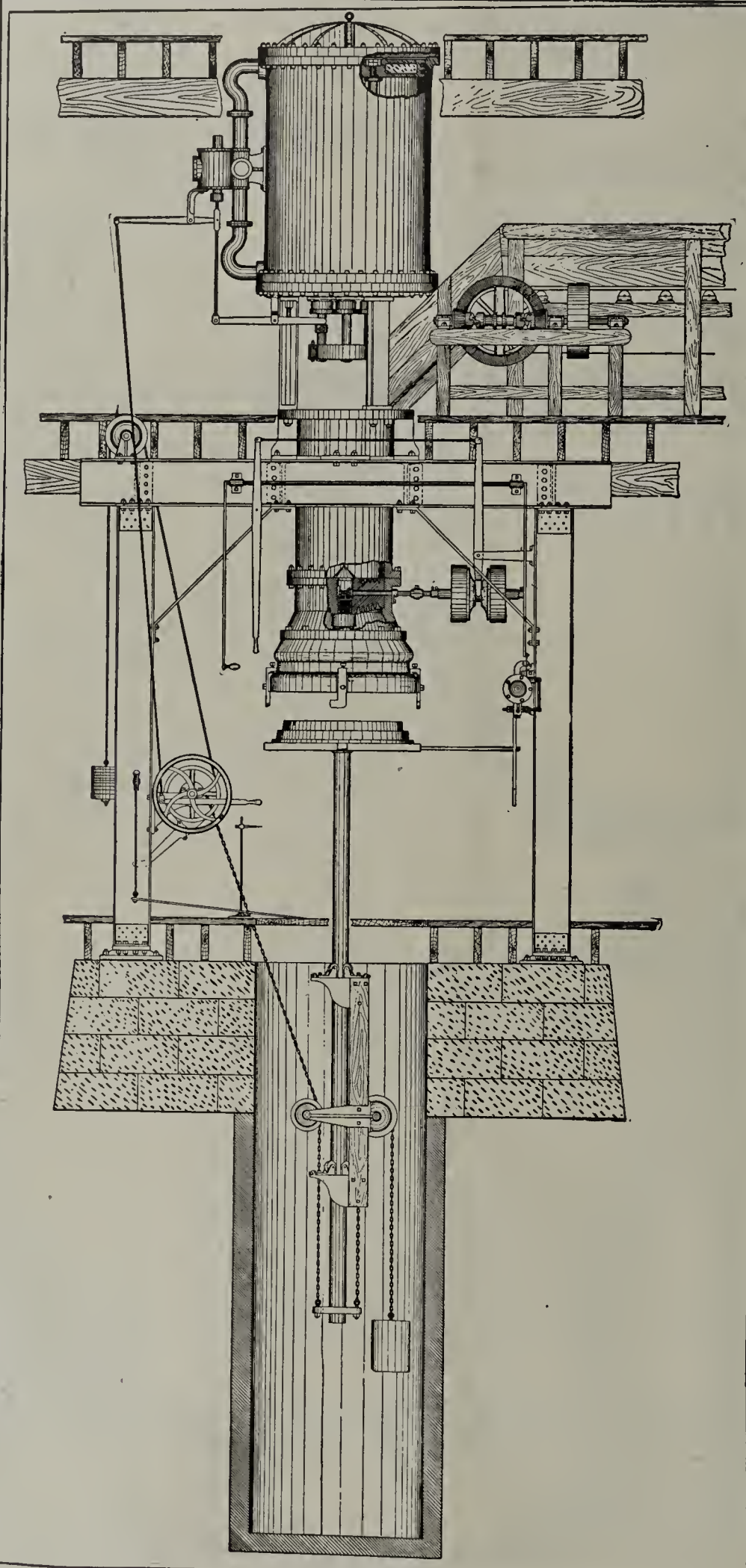
TUYERE AND SHAPE DIES FOR BESSIMER FURNACES



NOZZLE AND SLEEVE PRESSES

TUYERE PRESSES

DOUBLE END HORIZONTAL STEAM PRESSES

DRY AND WET PANS

CLAY MILLS COMBINATION CLAY PANS

CLAY WORKING TOOLS

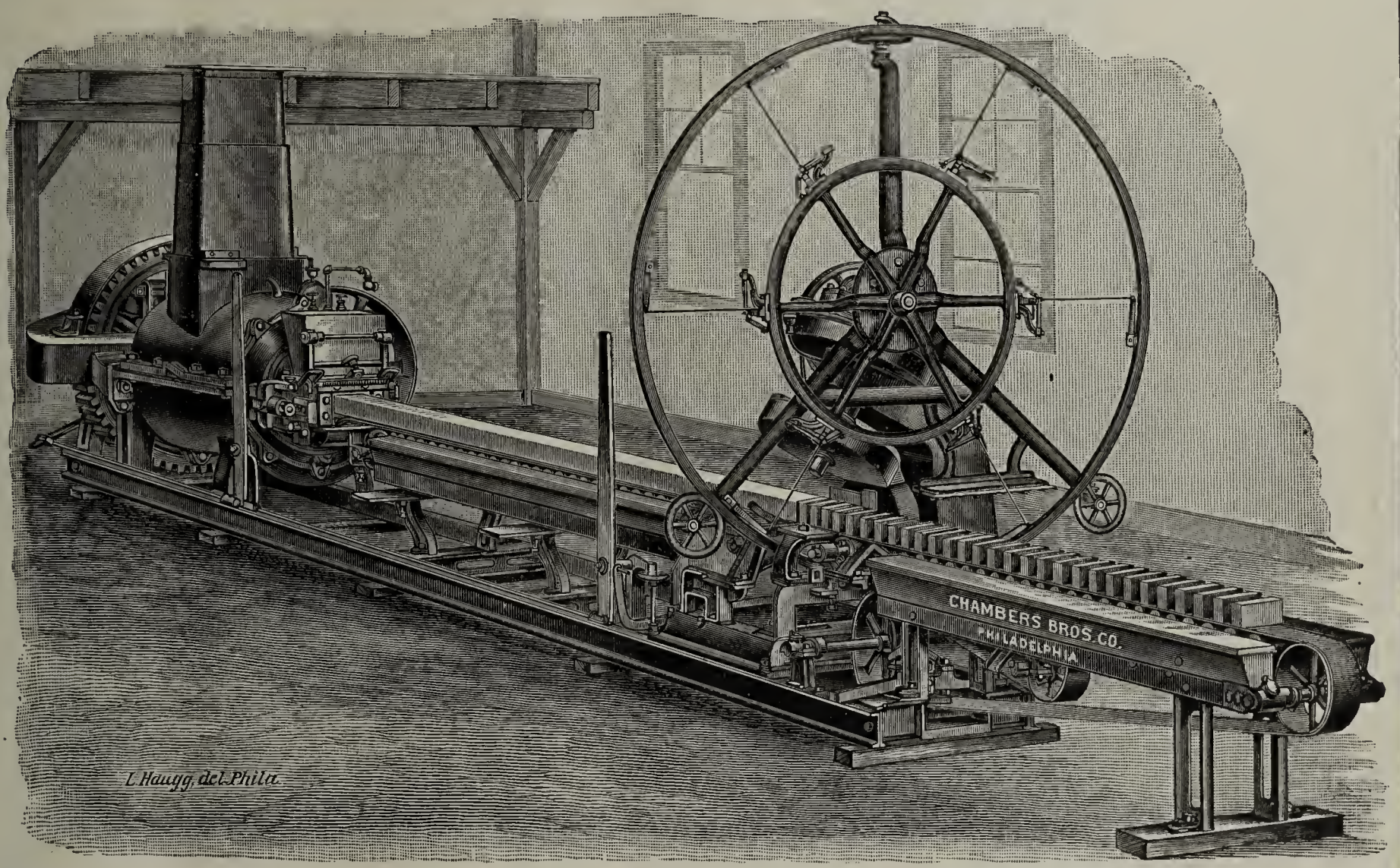
THE TURNER VAUGHN & TAYLOR CO.

WRITE FOR PRICES STATING CAPACITY

Cuyahoga Falls, Ohio, U. S. A.

MACHINERY FOR BUILDING BRICK
AND FOR STREET PAVERS

ROUND CORNER PAVING BRICK WITHOUT REPRESSING



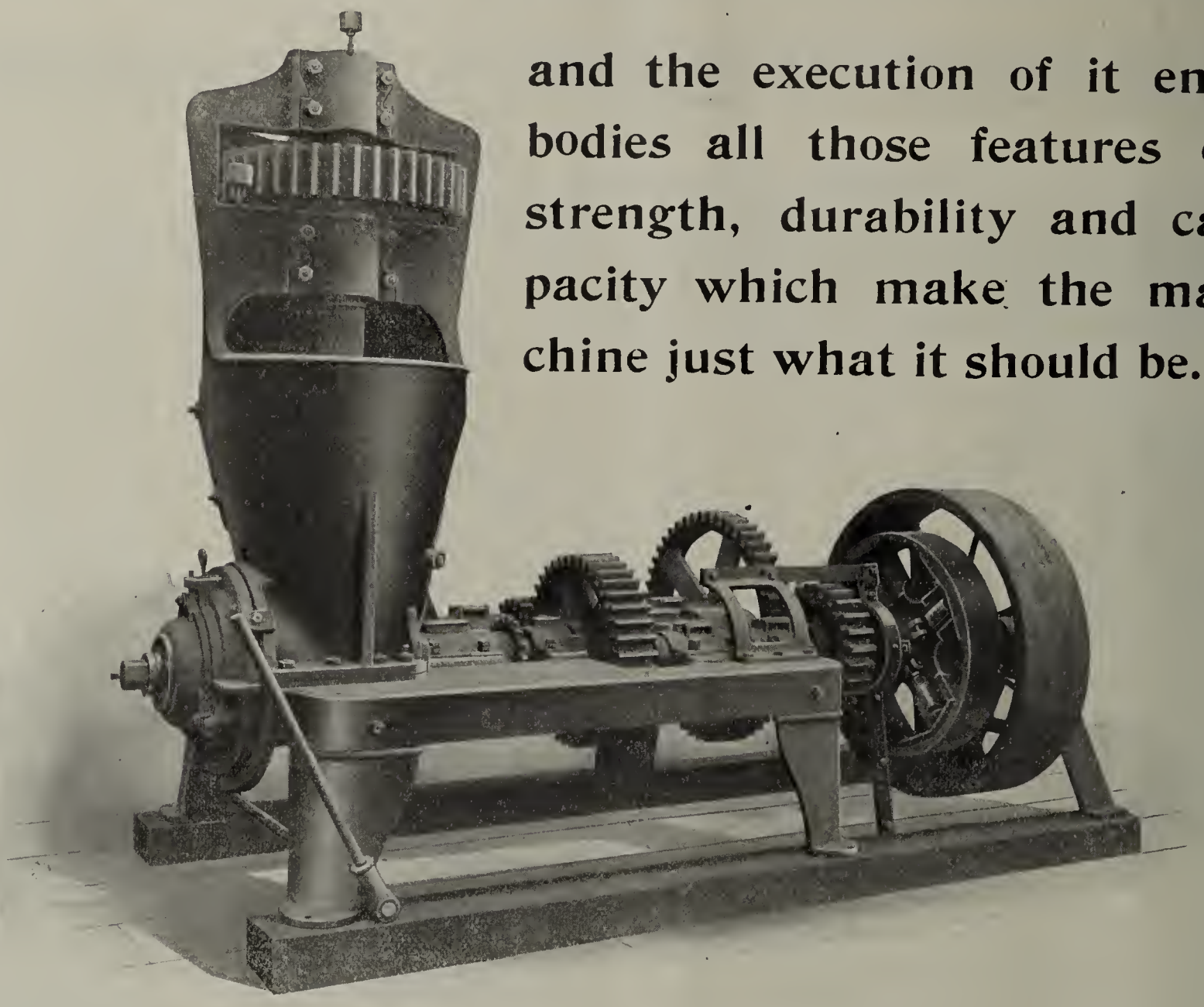
THE CHAMBERS AUTOMATIC SIDE-CUT BRICK MACHINE.

Automatic End Cut Brick Machines of five sizes, having capacity from 10,000 to over 100,000 brick daily under favorable conditions.

CHAMBERS BROTHERS COMPANY
52D AND MEDIA STREETS
PHILADELPHIA, PA.

E. R. FRAZIER, Chicago Agent,
59 West Jackson Boulevard.

The Design is Right



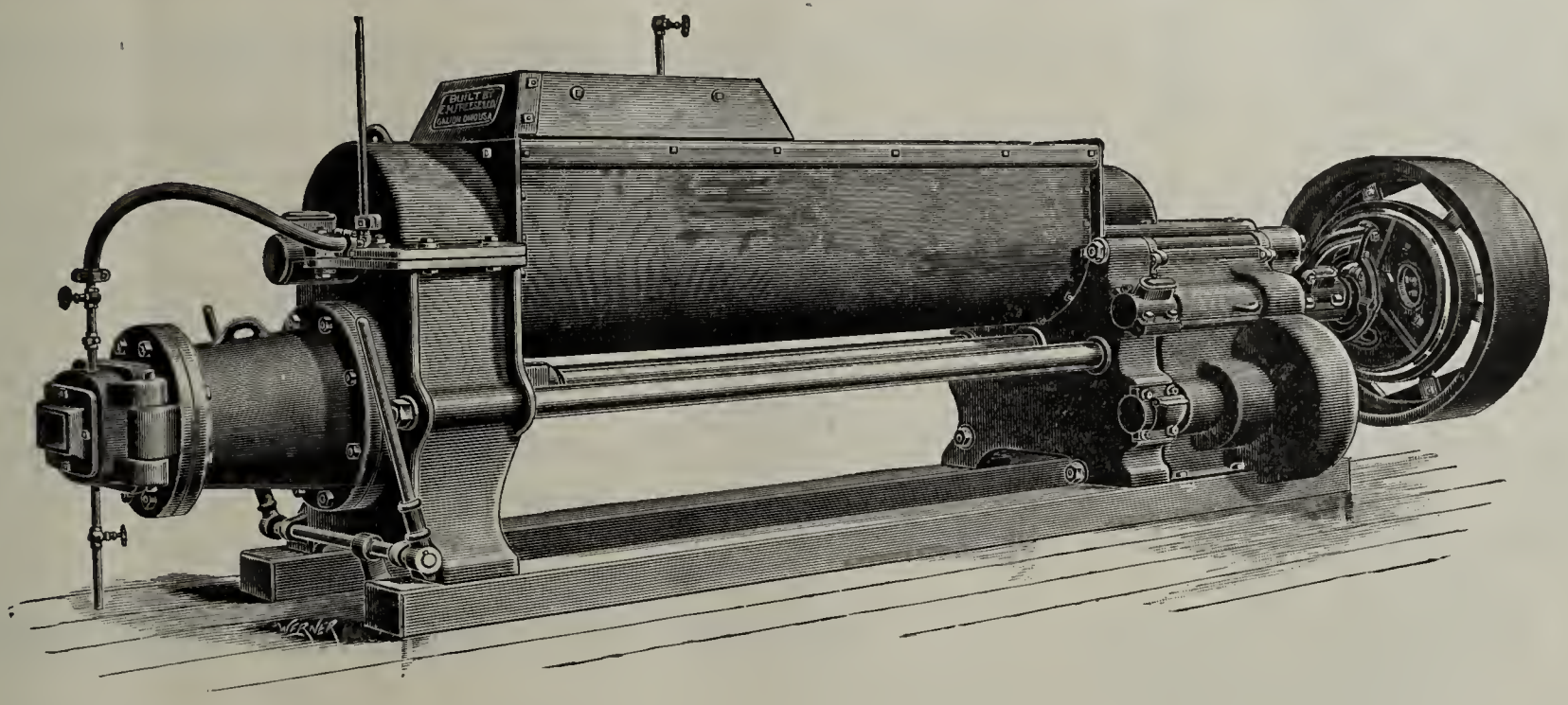
and the execution of it embodies all those features of strength, durability and capacity which make the machine just what it should be.

The Brewer No. 10 A

is a machine for making drain tile, brick and hollow blocks. It is intended for those plants which produce those kinds of ware with a single outfit. It is the latest production of builders who have been at the business for fifty years, and if there's anything better in this market it's hid away where people can't see it. Satisfaction or no sale are the terms under which you can buy it. Price no more than it's worth. Ask for particulars.

H. BREWER & CO., TECUMSEH, MICHIGAN.

UNION BRICK MACHINES



We build these Machines in five sizes. Capacities to 10,000 brick per hour.

Several hundred are in everyday use. They do first-class work and are convenient, economical and durable. This can be verified by investigation.

We also build Brick Machines with separate Pug Mill.

Don't forget our Automatic Cutters. **They give satisfaction.**

State your requirements and let us furnish particulars.

E. M. FREESE & CO.

GALION - - - - OHIO

A Long Argument

IT doesn't take a long argument to convince a Practical Brickmaker that the WONDER is THE machine—just see it work—it speaks for itself. Would the experience of a fellowcraftsman interest you? Read some extracts from their letters. Our machines in operation are our best advertisements. They show their merits, and MERIT WINS.

DES MOINES, IOWA, AUG., 17th, 1905

The Wallace Mfg. Co, Frankfort, Ind.,
Gentlemen:

In reference to the machine, I wish to say that the same is giving us entire satisfaction. For a time it was not speeded up enough to do the work we thought it should, and pulled heavily, but by changing pulleys we have the same running now at 300 revolutions. This speed makes the machine run very much lighter and turns out a satisfactory number of blocks.

The goods we are manufacturing are not laminated, very dense, and in a word, that might be called the Big Wonder quality. We are making the finest blocks in the State to-day, and have sold all we can manufacture for the next few months.

Very respectfully yours,
THE DES MOINES CLAY MFG. CO.,
Per O. C. Pixley, Vice-Pres. and Supt.

ORESTES, IND., JUNE 26, 1905

The Wallace Mfg. Co., Frankfort, Ind;
Gentlemen:

The Mill is giving splendid satisfaction. We made about 16,000 four-inch tile in one day and think we could have made 20,000 if we had been able to keep clay in. We have just finished a run of six-inch, making one floor of our sheds 74 x 40, two tile high, set close, in eight hours.

Yours truly,
ORESTES DRAIN TILE CO.

FOR FURTHER INFORMATION, WRITE

The Wallace Manufacturing Co.

Frankfort, Ind., U. S. A.

Leadership means Superiority, which tacitly acknowledged

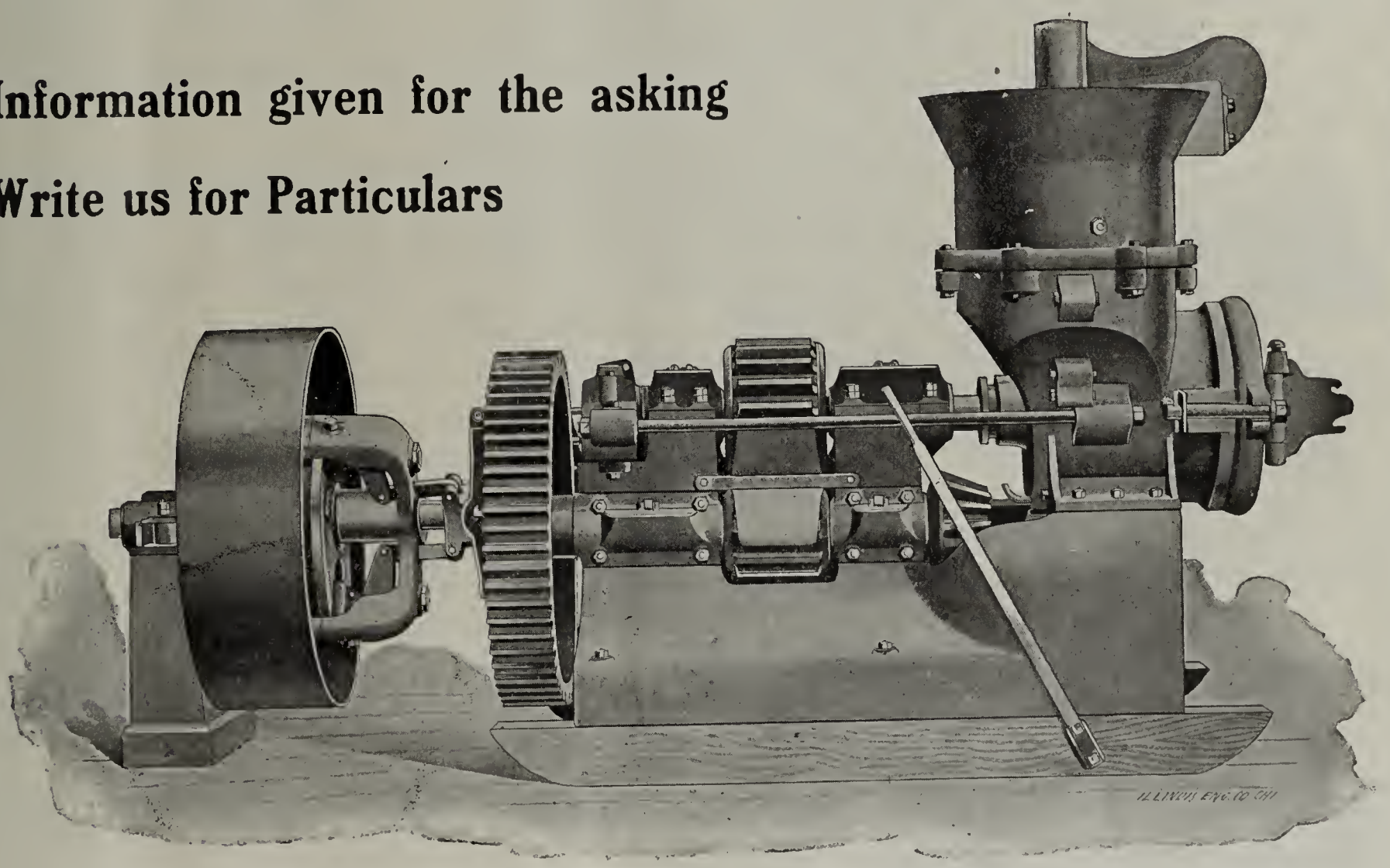
SHOWS UNDENIABLE MERIT

Success is based upon intrinsic worth and the success of the "WONDER" is phenomenal

Correct principal and thorough integrity in construction have made its supremacy unquestionable.
It works where others fail.

Information given for the asking

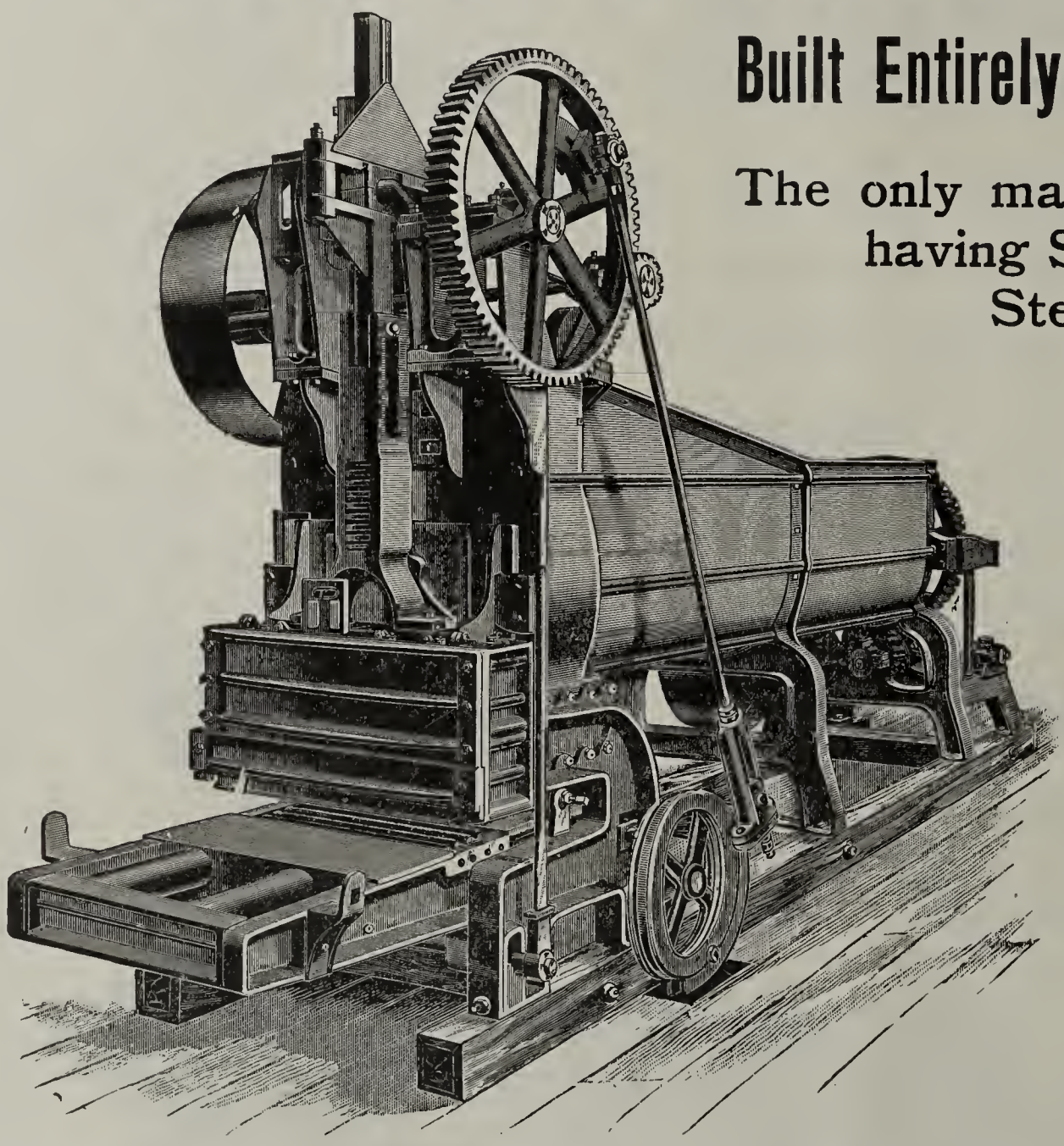
Write us for Particulars



The Wallace Mfg. Co.

FRANKFORT, IND., U. S. A.

THE POTTS
HORIZONTAL BRICK MACHINE



Built Entirely of Iron and Steel.

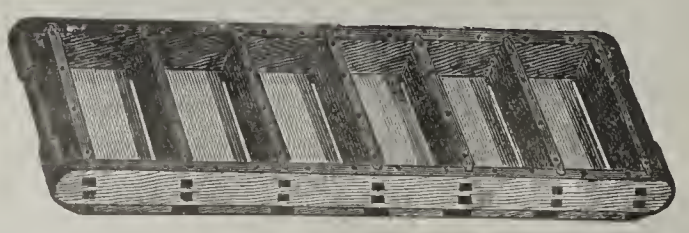
The only machine of this class having Steel Gear and Steel Shaft.

Built of the Best Material by the Best Workmen.

Simple, Strong and Durable.

No extra pug mill required to enable working the clay direct from the bank. Its great strength enables working the clay as stiff as practicable, insuring brick which will be STRAIGHT and SQUARE.

THE LEADER OF ALL SAND MOULD MACHINES.



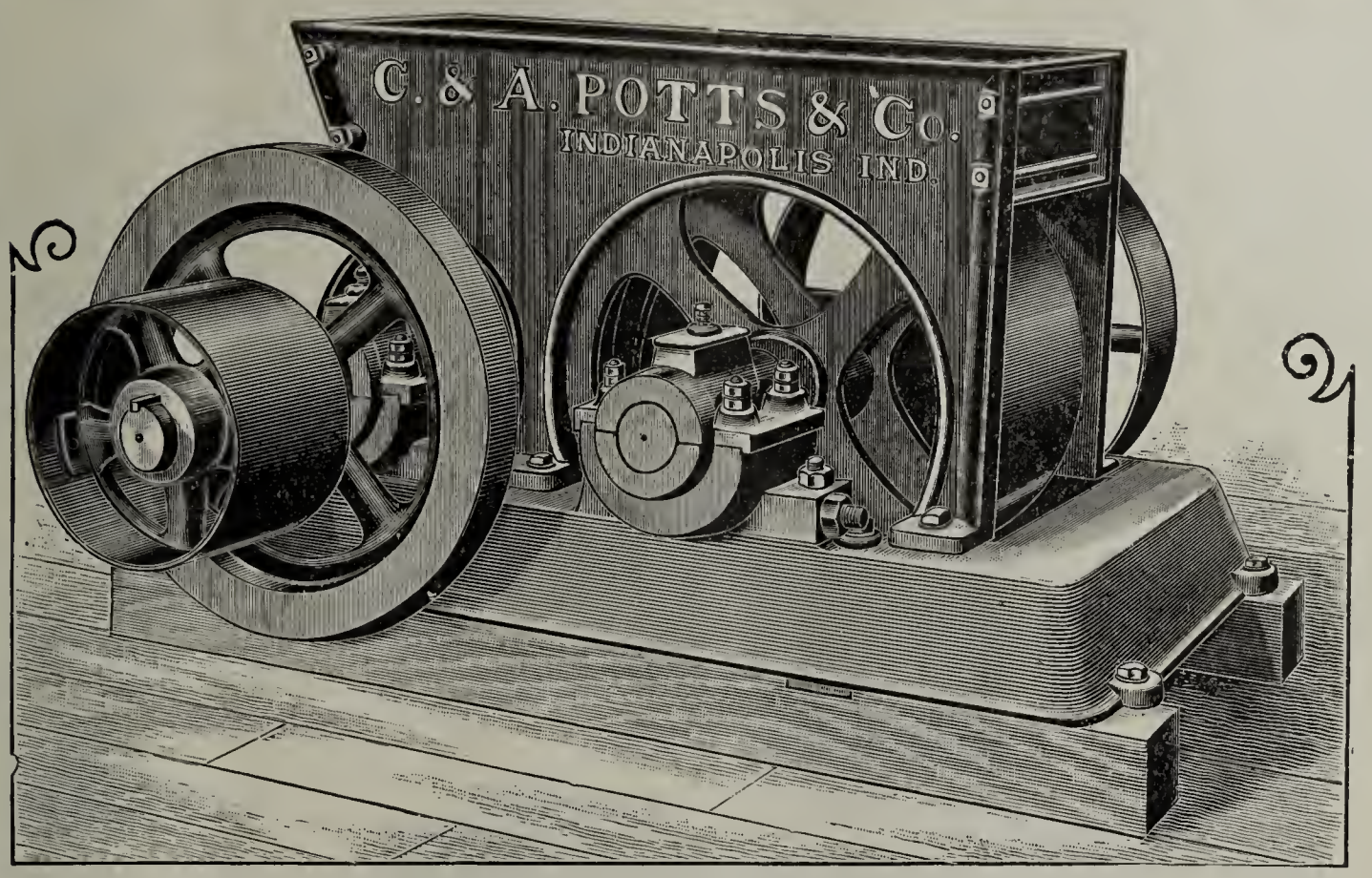
BRICK MOULDS A SPECIALTY

QUALITY IS OUR AIM.

We manufacture a complete line of Brick Yard Supplies. Write for prices.

C. & A. POTTS & CO., Indianapolis, Ind.

THE POTTS DISINTEGRATOR



Is not a spite machine, but is built the best possible. Having Heavy Chilled Rolls, Ring Oiling Bearings, Shafts of Steel and large in Diameter. The most successful machine for grinding out sticky clays and separating the stone.

THE POTTS MOULD SANDER

Simple in Construction,

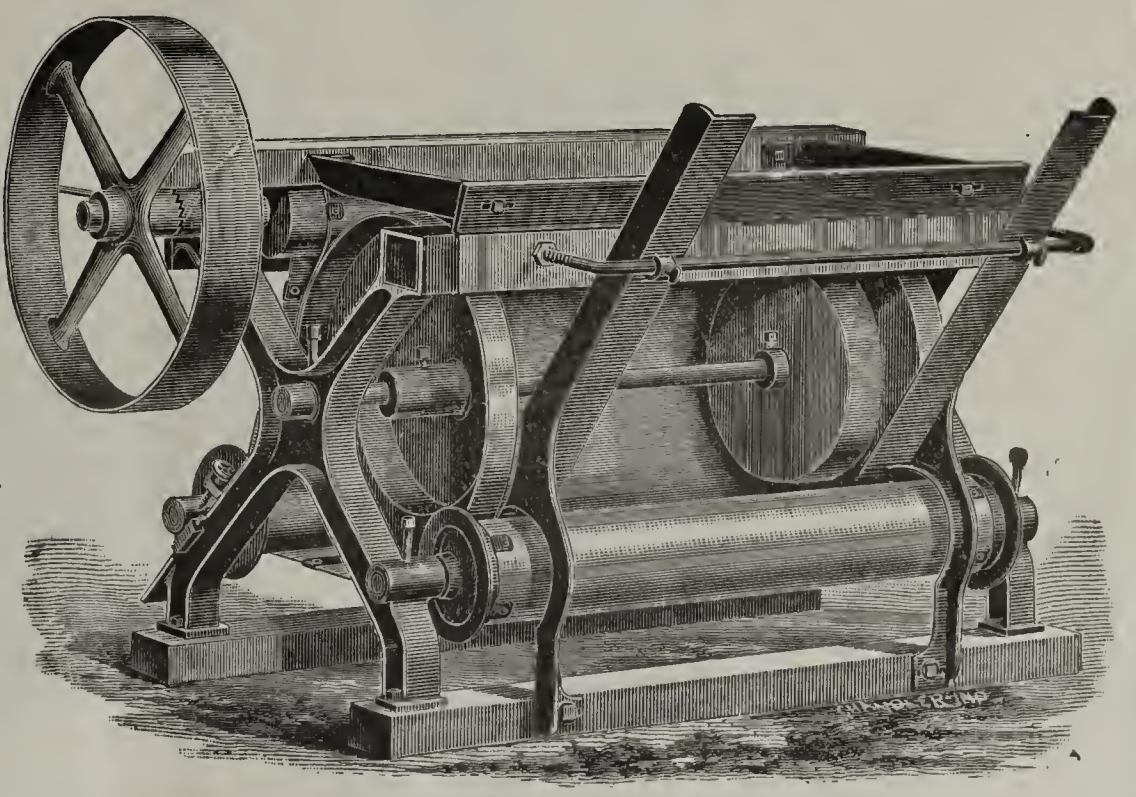
Strong and Durable,

Sands the Moulds Perfectly,

Never Strikes or gets Drunk,

Always Ready for Work,

No Brick Machine Complete without this Machine.



Patented February 5, 1889.

We make a specialty of equipping Sand Mould plants complete. We are the largest manufacturers of this class of machinery in the world. Write for prices.

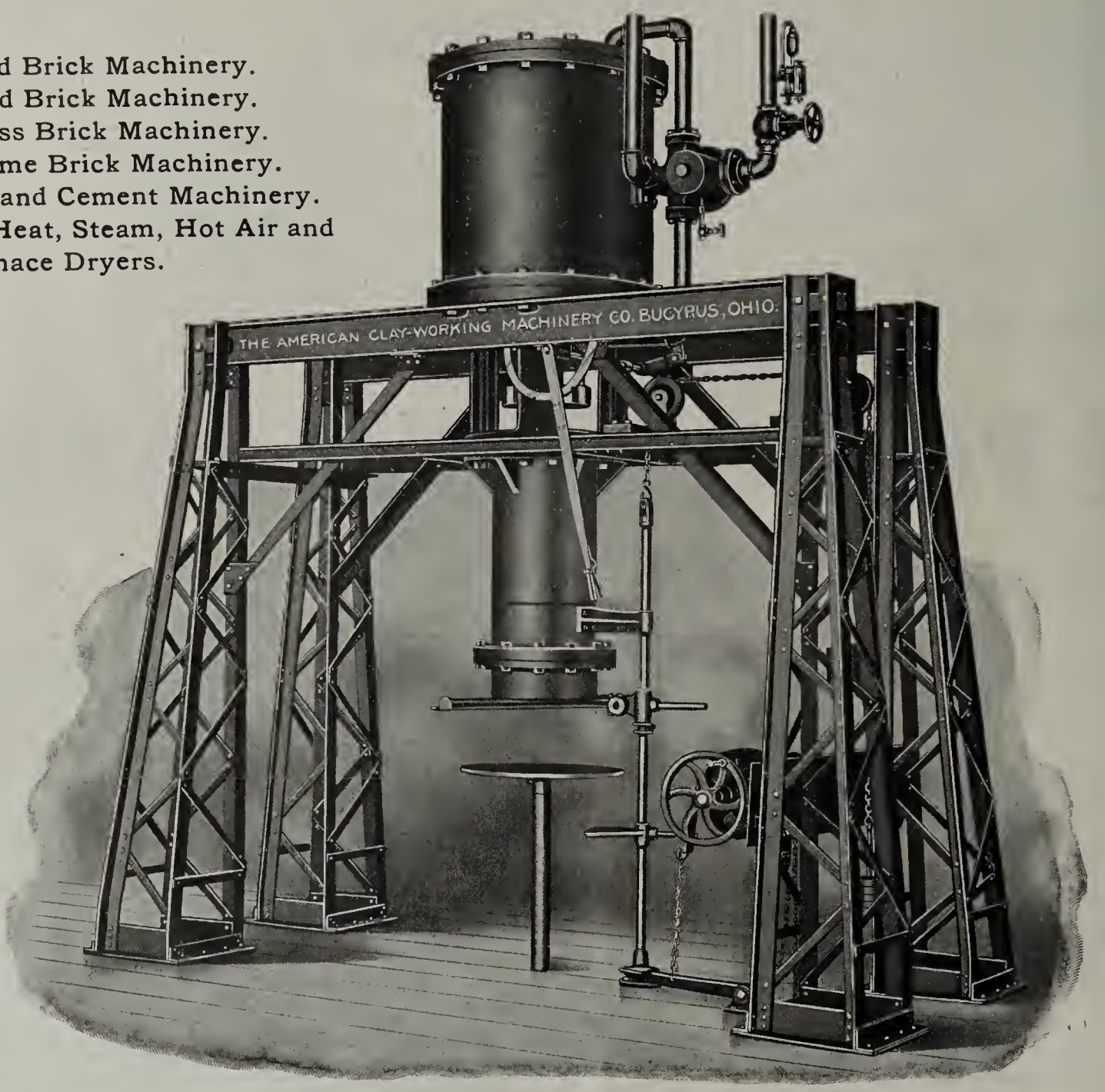
C. & A. POTTS & CO., Indianaoplis, Ind.

SEWER PIPE MACHINERY

Built Right Run Right

We build Complete Outfits for Sewer Pipe Plants. We have a line of presses that cannot be surpassed in economy of operation, convenience or capacity. All necessary appliances furnished. Send for Complete Catalogue. We build **everything** needed by the Clay Worker.

Soft Mud Brick Machinery.
Stiff Mud Brick Machinery.
Dry Press Brick Machinery.
Sand-Lime Brick Machinery.
Pottery and Cement Machinery.
Waste Heat, Steam, Hot Air and Furnace Dryers.



WE MAKE OUR OWN DRYERS AND CAN GUARANTEE THEM.

THE AMERICAN CLAY MACHINERY CO.

BUCYRUS, OHIO

Copyright, 1905, by Abbe Engineering Company.

THE above cut shows a Jumbo Pebble Mill recently shipped to one of the largest potteries in this country.

Size of 6'0" diameter x 8'0" long.

Pebble Mills for Glaze, Frit, Enamel, Glass, Feldspar, Flint, Colors, etc.

Eighteen different sizes carried in stock ready to ship all the time.

The only firm that has made improvements on these mills in the past ten years.

Write for our 80-page catalog today.

See our "Ad" next month.

ABBÈ ENGINEERING COMPANY
12th Floor --- 222 Broadway
NEW YORK CITY

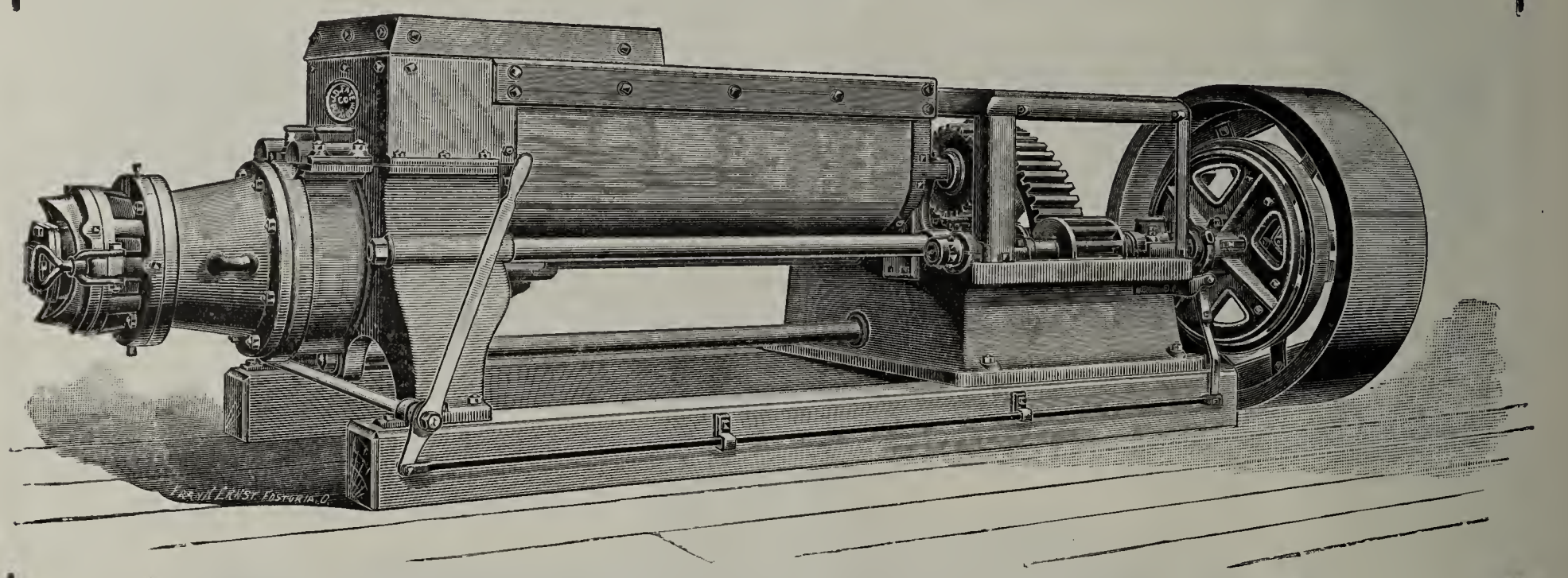
We have a complete testing
labaratory at your service

THE "PREMIER"

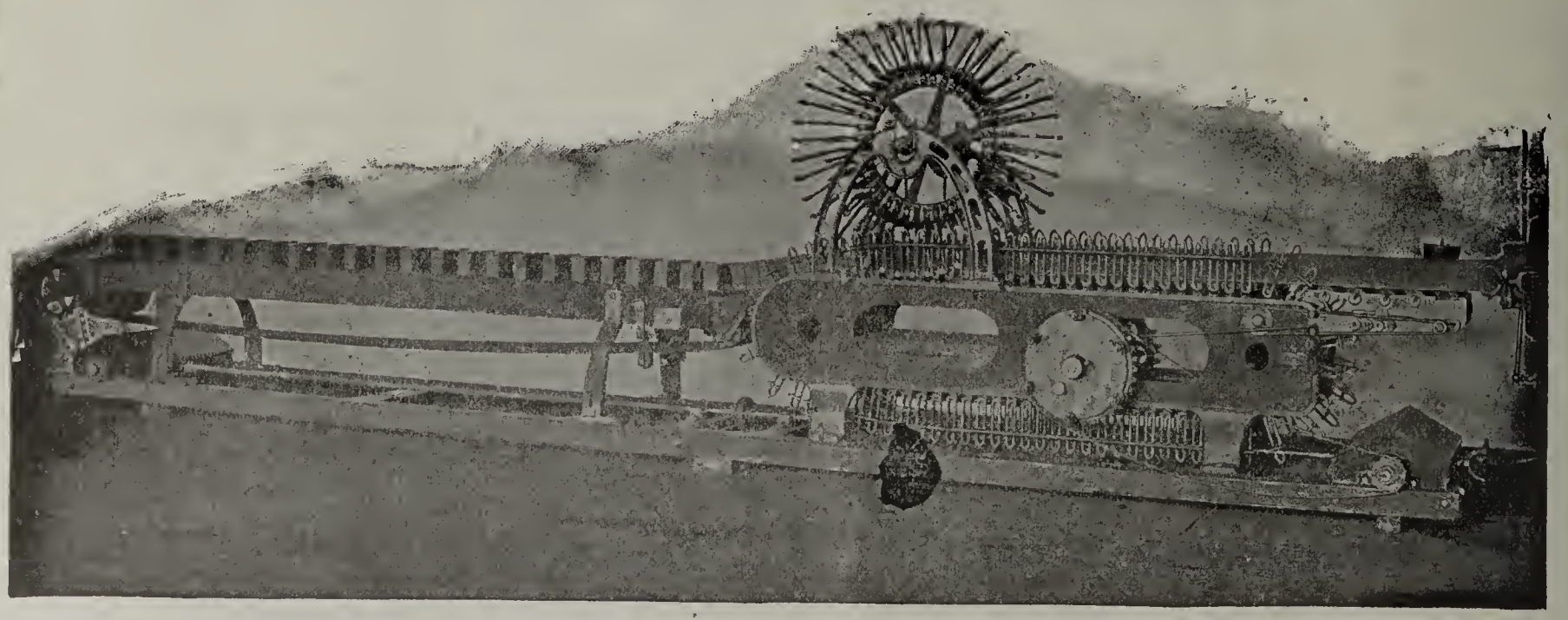
Combined Brick Machine

THE PREMIER LINE — THE J. D. FATE COMPANY

THE LARGEST LINE OF AUTOMATIC CUTTING TABLES IN THE WORLD



WITH BENSING'S AUTOMATIC SIDE-CUT BRICK TABLE.



Make a combination of Brick Machinery which is pronounced by practical brick makers to be the most perfect arrangement of stiff mud machinery now on the market.

It is unequaled for strength, durability, capacity and quality of ware produced.

Write us for catalog and full particulars of the "Premier" line of Clay Working Machinery.

THE J. D. FATE CO., = Plymouth, Ohio

WESTERN REPRESENTATIVES:

B. E. LA DOW, 701 Dwight Bldg., Kansas City, Mo.

Pacific Coast: LEW THORNE, Grand Hotel, San Francisco, Cal.

CLAY RECORD

Vol. XXVII. No. 10. CHICAGO, NOVEMBER 29, 1905. Semi-Monthly, $1.00 per Year Single Copies, - 10 Cents

AMERICAN BRICK MACHINES FOR GREAT BRITAIN.

Consul Williams, of Cardiff, reports a good chance for American manufacturers of brickmaking machines to get into the British market. New laws regarding buildings will require the reconstruction of many old buildings of brick, and all new buildings must be of brick or stone. He writes:

Brickmaking promises to be a profitable industry in Britain during the present century. Existing conditions will make it necessary to rebuild fully one-half of the houses now standing, for the housing movement, which is gaining momentum rapidly, demands more modern and better houses both in congested centers and in rural districts. At the same time the growth of industrial towns and the development of new coal fields will require many other new houses, while the development of industries and the growth of towns will create an additional demand for fire and paving brick. The building by-laws now require that practically all new houses must be built of brick or stone. These by-laws, while promoting sanitary conditions and greatly reducing fire losses, have handicapped the building trades by making building very expensive. They have also affected brickmaking, for the brick men, secure in their trade, have remained unprogressive until recently, following the old-fashioned methods and retaining the out-of-date machinery.

But one phase of the housing movement is introducing a change. Its promoters have discovered that existing by-laws make the present system "the most expensive way of building devised by man," and they are trying to secure modifications of the by-laws to allow of the use of wood, iron, and concrete, instead of brick and stone. Their effort has awakened the brickmakers, and they are beginning to introduce modern methods and machinery in order to reduce the cost of brickmaking. This change opens the doors of opportunity for America manufacturers. Until recently the largest brickmaking machines used had a capacity of less than 20,000 bricks per working day, and many large manufacturers were satisfied to use even the smallest machines as long as they held together, but the change referred to has created a demand for machines with larger outputs. As a result of this, certain firms at Nuneaton, Leeds, Acrington, and other towns are turning out brick presses with a capacity of 10,000 to 25,000, and tile presses with an output of 50,000 or more per day of ten hours.

There is a great number of small brickyards in Britain, and medium-priced machinery with a comparatively high output is in demand. These machines, like all others seeking a British market, must be of a high quality, for the Englishman expects a maximum of service from his machinery, and no bargains are ever found in his scrap pile. This is only one of the many local conditions that must be thoroughly learned by Americans. It is essential to study the British point of view. This is best stated in the trade journals, many of which publish directories of the firms engaged in their particular trade.

American manufacturers can not reasonably expect to introduce high-priced machinery in Britain by correspondence. To win confidence and recognition they must first establish headquarters here. The representatives employed should always be men of the highest type in their class, but after all is done it will be found that the machine itself in operation will be the best salesman. The Englishman is seldom convinced of the advantage of making a change until he has convinced himself. Lastly, American salesmen looking for immediate results will be disappointed. A permanent market can be won only slowly and with much initial effort and expenditure.

SEASON WAS AN UNEXPECTEDLY GOOD ONE

Notwithstanding a poor opening the season of 1905 has been a good one for the brickyards of Detroit and environs. The total output for the year has been 150,000,000. Most of the yards have closed down, but five of them will run all winter. The prospects for next season, owing to the building contracts closed, are said to be good. Each of the fourteen plants down river give employment to from 30 to 150 men.

TILE VS. BRICK FOR MINE BUILDINGS.

When one compares the buildings found about coal mines today with those of 10 or 15 years ago, he is impressed by the improvements made in the way of durability as well as neatness, says William L. Affelder, superintendent of the Mosgrove Coal Works, Mosgrove, Pa., in the October issue of "Mines & Minerals," the well known authority in its field. The flimsy fire-traps of a few years ago have given way to well-built structures in which considerable effort has been made to render them as nearly fireproof as possible. The power houses, shops and various buildings found about mines are now equipped with such varied and valuable machinery that the additional expense incurred in building fireproof structures is entirely warranted.

Brick buildings have for some time been taking the place of wooden structures about mines, but in the last few years there has been a growing tendency toward the use of hollow tile building blocks. If the merit and economy of their use were more thoroughly appreciated, their use would probably become more general. It would hardly be advantageous to use tile in the construction of very large or complicated buildings, but in such buildings as are shown in Figs. 1 and 2, they were not only admirably adapted but they proved very conclusively the economy of their use. Mine buildings are seldom too high or irregular for their successful use.

FIG. 1. POWER HOUSE, MOSGROVE COAL WORKS.

The size of tile best adapted for use in such buildings as are ordinarily used about mines is the 8 in. x 8 in. x 16 in., weighing 33 pounds. It has a 6-inch square opening from end to end leaving a rim of hard-burned, salt-glazed, vitrified clay 1 inch thick. The corner tile are built stronger, being 1 1-4 inch thick and are reinforced by a 1 1-4-inch partition extending across the center. The ordinary tile have the opening in the direction of their length, while in the corner tile, it extends vertically. The tile are from light to dark brown, depending upon their composition and degree of vitrification.

It is not the purpose of the writer to show the exact relative economy between tile and brick from the standpoint of first cost, for a set of figures applying in one locality would not exactly apply in another, but he will attempt to show that the first cost is less in so many different details, that the ultimate decrease in cost must be apparent in any locality.

First-grade tile of the size above mentioned are at present quoted at 6 cents each at the point of manufacture while ordinary building brick are quoted at $6 per thousand. Assuming that 14 brick weighing 6 1-4 pounds each will lay a square foot of surface in a 9-in. wall, and assuming that one tile, with the surface in a 9-inch wall, and assuming that one tile, with the accompanying mortar will lay an area of 8-inch wall 8 3-8 in. x 16 3-8 in., or about as much as 13 1-3 brick; then 75 tile weighing 2,475 pounds and costing $4.50 at the factory will lay as much wall as 1,000 brick weighing 6,250 pounds and costing $6 at the factory. From these figures, it is readily apparent that tile would cost 75 per cent. as much as brick, and besides the freight on tile would amount to but 40 per cent. of that on brick. This latter figure would, of course, be somewhat influenced by the relative distance of the point at which the building was to be erected from the nearest brick works or tile works, but inasmuch as freight rates are dependent much more upon weight than distance, it is hardly likely that the factor of distance would entirely counteract the advantage due to the difference between the weight of tile and brick.

In many instances, the relative weight of tile and brick plays a far more important part in the cost of hauling than in the cost of freight. This item is especially worthy of note in buildings erected about the pit mouths of mines located at some distance from, or elevation above, the railroad tracks.

In many instances, the relative weight of tile and brick plays a far more important part in the cost of hauling than in the cost of freight. This item is especially worthy of note in buildings erected about the pit mouths of mines located at some distance from, or elevation above, the railroad tracks.

Not only are the tile far cheaper in first cost, transportation and haulage, but they are far less expensive to lay, inasmuch as they can be laid at 3 cents each or at $2.25 for an area of wall equivalent to 1,000 brick in a 9-inch wall. This would be only 50 per cent. of the cost of laying brick at $4.50 per thousand. Both figures include the cost of helpers. Much less mortar is used in laying tile than brick, because of the fact that they are so much larger, but inasmuch as tile should be laid in a mortar of one part cement, one part lime and two parts sand, whereas brick can be laid in a lime and sand mortar, the saving in quantity is about equalized by the cost of the cement used.

The questions of strength and durability might arise in the

minds of some persons who have never used tile, but the manufacturers' claim that they will sustain a downward pressure of 200,000 pounds should dispell all doubts. The fact that the rear wall of the fan house shown in Fig. 2 is 34 feet long and 22 feet high and is in no way braced, is an eloquent answer to the question of strength. The writer doubts very much whether a 9-inch brick wall of the same dimensions would stand without buckling. If there were any tendency toward buckling in a tile wall, the arching of the large blocks would have a much greater tendency to stop it than that of the far smaller brick.

Tile combine other advantageous features besides those of economy and durability. Because of their hollowness, the dead air space tends to make a building far cooler in summer and warmer in winter than a brick building would be. The glazed surface allows but little dust to accumulate upon them, and what does collect is easily washed off

Fig. 2. Shop and Fan House. Mosgrove Coal Works.

by occasionally spraying them with water. The glaze also prevents dampness. In order to emphasize the question of economy of tile compared with brick in a special case, the writer will illustrate it by the actual conditions encountered in erecting the two buildings shown in Fig. 2. Assuming as a basis for calculation 100 square feet of wall, this area would have required 1,400 brick weighing 8,750 pounds and costing $8.40 at the factory, or 105 tile weighing 3,465 pounds and costing $6.30. At 60 cents per net ton which is the freight rate from the nearest brick works, the freight would have been $2.62, while the freight on tile was 55 cents per ton, or 95 cents. At $1.10 per ton for hauling from the railroad station to the pit mouth, (a distance of over 2 miles on very hilly and difficult roads) the brick required for 100 square feet of wall would have incurred a haulage expense of $4.80, while the cost of hauling tile was only $1.90. It would have cost $6.30 for brick laying but it cost only $3.15 to lay the tile. At $1 per thousand brick, the lime mortar for a brick wall would have cost $1.40, which figure will also answer for the cost of the cement mortar used for the tile. It is evident from combining the foregoing figures that for material, freight, hauling and laying, each 100 square feet of 9-inch brick wall would have cost $23.52, while tile cost $13.70, or 58 per cent. as much as brick.

In concluding, the writer wishes to state that while some of the readers of this article may take exception to the figures used in the foregoing calculations, it should be borne in mind that they are intended to apply only in the particular locality in which the buildings illustrated were erected. With due allowance for local variations in the prices for material and labor, it is apparent that the walls of a building can be built of tile at a cost of from 50 per cent. to 75 per cent. of that of brick, resulting in a neat, durable and economical structure.

BARBER ASPHALT CO. TO BUILD A LARGE PLANT.

A movement in the manufacture and sale of paving brick in Iowa inaugurated by President John Mack of the Barber Asphalt Paving company, while on his recent western trip, will be of more than passing interest to the contractors and to the city officers of Iowa cities contemplating such improvements.

It will be recalled that the asphalt company during the recent war between the brick and asphalt interests in Iowa, purchased the Capital City brick plant at Des Moines, and has since been engaged in the manufacture and sale of paving brick in Iowa, and the company has also been a strong competitor of the brick contractors in the line of brick paving.

While in the west recently, Mr. Mack authorized the expenditure of $200,000 in establishing an entirely new brick plant at Des Moines to succeed the old Capital City plant. Work has already commenced on tearing down the old plant and making arrangements for the construction of the new at a point not far distant.

The new plant, it is said, will accommodate fourteen kilns, and the asphalt company will enter into the manufacture of all sizes and kinds of paving brick and blocks, both for general sale and also for use in completing their contracts.

The sale of Capital City brick has been stopped for the present for the reason that the company has no more than enough on hand to complete present contracts. As soon as the new plant is in operation, however, the asphalt company expects to become an active competitor for the sale of brick to contractors and cities requiring them.

The establishment of the new and enlarged plant, together with the fact that the asphalt people will make the paving blocks for which the Purington company of Galesburg has become famous, would indicate that the asphalt company intended to go after a portion of the extensive trade now enjoyed by the Galesburg people.

Mr. Mack, president of the Barber company, is also president of the Mack Brick company of New York, one of the largest companies of the kind in the country, and he has lately been casting longing eyes upon this excellent western field. Not being able to compete with western companies from his own plant, on account of the long haul and high freight rates, Mr. Mack proposes to establish a western plant with ample capital behind it to make the venture a success.

Unless indications are misleading we may expect to see the price of paving brick and blocks in a down hill movement when the eastern factor becomes a live competitor in the western field.

THE SOUTHERN BRICK AND TILE WORKS.

On the Mobile & Ohio railway, in the southeastern portion of Tennessee, Madison county, in a small village, Gilmore, is located the plant of the Southern Brick & Tile Works.

The company was organized two years ago, capital stock $30,000, the entire amount being taken by Jackson, the county seat, or home capital, and is fully paid.

Its organization is officered: Rush A. Jones, president; W. J. Hunt, vice-president; B. M. Thompson, secretary and treasurer; X. B. Wickersham, general manager.

The company is to be congratulated on having the services of Mr. Wickersham. The general layout of the plant, the kind and quality of the machinery and the manner in which it was installed evidences most excellent judgment, and doubtless has contributed largely to the success which the company has enjoyed, and the credit is freely given by those interested to Mr. Wickersham.

Looking at the view of the plant given in the cut showing the plant it is plainly seen there can be no backward movements or double handling, due to the location of the machinery, building, dryers and kilns, all of which means the plant can be, and doubtless is, run economically.

and is operated year's end to year's end, and likewise the dry press plant, the latter making 20,000 high-grade pressed brick every ten hours.

The accompanying illustration shows one of the Reliance Dry Press Brick Machines in operation at the above brick plant.

This press was built by the Reliance Machine & Tool Works, of St. Louis, Mo., which, after years of experiments, have finally succeeded in placing on the market a brick

View of the Clay Bank.

View of the Southern Brick and Tile Works, Gilmore, Tenn.

The view of the clay bank shown on cut is interesting because it indicates some features not always found around clay banks; first, note the lay of the several different strata of clay, that each may be gotten at conveniently; and secondly, the down grade from the clay bank to the plant. What this all means will be appreciated by those having experience around brick plants.

The manufacturing of the company covers building or common brick, face or dry pressed brick, tile and fire brick. The stiff-mud machine has a daily capacity of 20,000 brick

press, whose product will be uniformly pressed throughout, pressure being applied equally from the bottom as from the top.

A brief description of the press, explanatory of the accompanying illustration, will not be amiss, and doubtless be of interest.

The machine is entirely self contained; all strain due to compression coming directly on the steel tension straps. The gearing and driving mechanism being close to the base plate, prevents all shock and jars.

The pressure is applied by three eccentric rolls, which move toward each other, being driven by the center roll by means of heavy gears. These rolls are so constructed that when the final pressure is required, the inclination of the roll is very gradual, thereby exerting this pressure at a very slow motion. This compression mechanism forms the basis of the great power of the press, and the absence o link and toggle mechanism, permits the machine to be built more simple, compact and with fewer parts. This means o compression by eccentric rollers is entirely new in claywork ing machinery, and though the rolls are of peculiar shape, they operate as smoothly as any round roll.

The Reliance Dry Press.

ENJOIN BUILDING OF BRICK PLANT.

Charles Flowers, former corporation counsel at Detroit, Mich., will seek an injunction against the erection of the city brick plant, the contract for which was supposed to be given to Frank Reich.

Mr. Flowers says he is not acting in the interest of any of the contractors whose bids were turned down, but is acting solely for the city of Detroit.

"The municipal brick plant is an illegal proceeding, and cannot be consummated. The state law gives the city no right to engage in any municipal enterprises, unless a special grant from the state is given."

Officials in the department of public works told Mr. Flowers the contract between Frank Reich and the city has not yet been signed, owing to some hitch in the specifications—an error in their legal form or something of that nature.

The Collingwood Brick Co., Toledo, Ohio, has bought 40 acres of land on the Michigan Belt railway and will erect a modern plant with a capacity of 20,000,000 brick a year.

THE PRODUCTION OF FULLER'S EARTH IN 1904.

The production of fuller's earth, which is consumed in this country chiefly by the manufacturers of lard and cottolene, increased from 20,693 short tons, valued at $190,277, in 1903, to 29,480 short tons, valued at $168,500, in 1904, according to the annual report of the United States Geological Survey. It is noteworthy that the price was considerably less during 1904 than during 1903. The production was limited largely to Florida, shared to some extent by Arkansas, and to a less degree by Alabama, Massachusetts, Colorado, and New York. Utah produced an experimental lot of half a ton during the year. Of unwrought or unmanufactured fuller's earth 1763 long tons, valued at $9,546, were imported into the United States during 1904, and 7363 long tons of wrought or manufactured fuller's earth, valued at $64,460.

Fuller's earth is chiefly employed abroad for fulling wool, but in America it is used mainly for deodorizing, bleaching, and clarifying fats, oils, and greases. For the purpose of clarifying lard and cotton-seed oil a small quantity, 2 to 3 per cent. of fuller's earth is ground to a fineness of 100 to 120 mesh and is added to the hot oil. After a thorough agitation the hot liquid is passed through a filter press, and when the earth and coloring impurities have been removed the oil is nearly white. It is understood that fuller's earth has almost superseded bone black in this process. A small quantity of fuller's earth is also marketed in powdered form, specially prepared for removing grease spots. It might also be used to advantage in removing calcium carbonate from water used for boiler supplies and thus prevent deleterious incrustations on the inside of boilers.

The value of fuller's earth as a bleacher in the filtration treatment of various oils is shown in the fact that while the quantity produced in the United States increased from about 7,000 short tons in 1895 to about 30,000 tons in 1904, the imports also have grown from over 8,000 tons in 1898 to over 15,000 tons in 1903. These 15,000 tons, together with our production of that year, made a total consumption of over 35,000 tons for 1903. Similarly, in 1904, in spite of the increased production to 29,480 short tons, the imports were over 9,000 tons, so that the total quantity absorbed by the industry amounted to nearly 40,000 short tons.

The production of Florida in 1904 was about three-fourths of the entire output of the United States, and it will probably be greater next year. It is likely also that the output of fuller's earth in Arkansas for use in refining animal and cotton-seed oils will be considerably increased.

This report on fuller's earth is an extract from the Survey's forthcoming volume, "Mineral Resources of the United States 1904," and may be obtained, free of charge, on application to the Director of the United States Geological Survey, Washington, D. C.

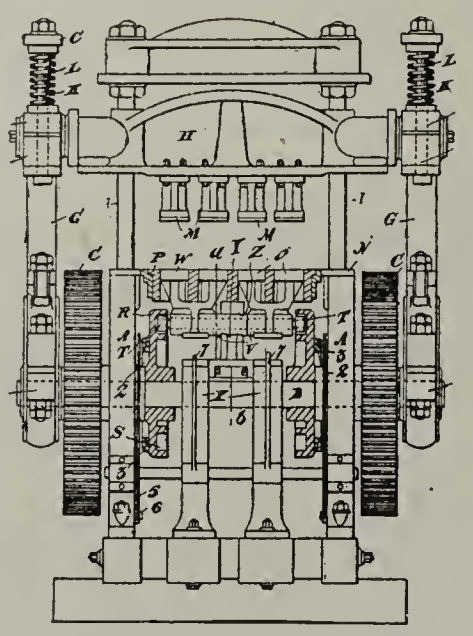
August Huseman, of Pittsfield, Ill., has bought a brick making outfit at St. Elmo, and will move it to Pittsfield to make brick and tile.

NEW INVENTIONS THAT ARE OF INTEREST TO THE CLAY MANUFACTURER.

These new inventions are those that are especially of interest to anyone engaged in the line of building materials and their manufacture, or machinery to make them:

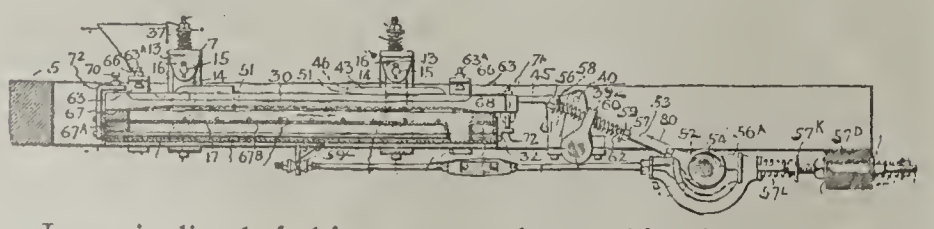
801,043. Brick-press. Emile von der Osten, Canada, assignor to William Beith, Toronto, Canada. Filed April 11, 1905. Serial No. 254,999.

Claim—In a machine of the class described, the combination with the machine-frame, the main shaft mounted therein, cams keyed on said main shaft and within said machine-frame and provided with cam-grooves on their inner sides, the table of the machine provided with molds, a plurality of lower plungers operating therein and above said main shaft, a bar passing through the lower portions of said lower plungers, and friction-rollers on the ends of said bar and operating in said cam-grooves, of a pedestal independent of the machine-frame and extending above said main shaft and between said cams, upon which said lower plungers rest during the filling of the molds and the compression of the bricks, thus entirely relieving said cams of all strain or pressure during these periods.



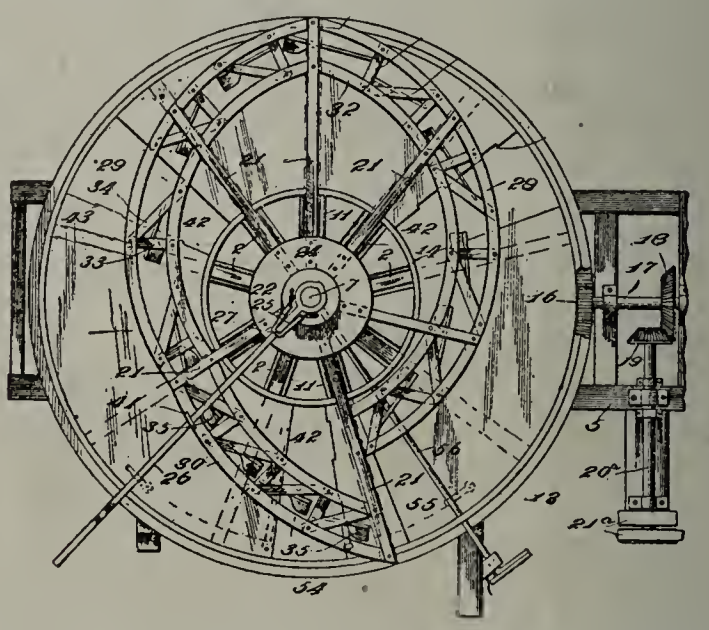
In a machine of the class described, the combination with the machine-frame, the main shaft mounted therein, cams keyed on said main shaft and within said machine-frame and provided with cam-grooves on their inner sides, the table of the machine provided with molds, a plurality of lower plungers operating therein and above said main shaft, a bar passing through the lower portions of said lower plungers, and friction-rollers on the ends of said bar and operating in said cam-grooves, of a pedestal independent of the machine-frame and extending above said main shaft and between said cams, upon which said lower plungers rest during the filling of the molds and the compression of the bricks, thus entirely relieving said cams of all strain or pressure during these periods, guides secured at their lower ends to the top of said pedestal and at their upper ends to said table, and a block, mounted on said bar, operating between said guides so as to keep said lower plungers in alinement with said molds.

800,693. Shaking-screen. John A. Traylor, Denver, Colo., filed Dec.. 28, 1904. Serial No. 238,613.



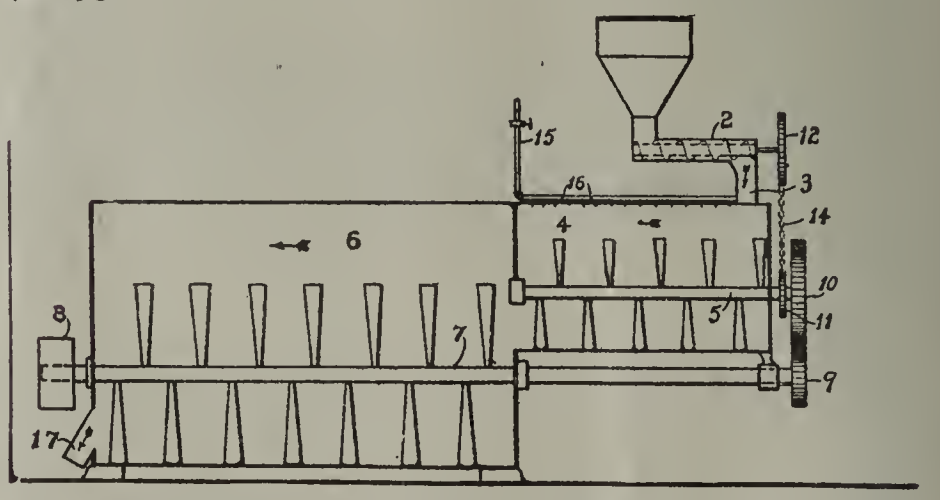
In an inclined shaking-screen, the combination of an operatively-supported screen provided with a supporting-bed of parallel-arranged wires for supporting said screen throughout is surface, a screenings-catching pan positioned below said screen, and arranged to be reciprocated with said screen, a plurality of raised projections on the surface of said pan arranged in any predetermined order and direction a discharge-spout at the discharge end of said pan with a power-operated reciprocating device arranged and adapted to impart a spring-actuated impulse throw-stroke in the direction of the flow of material over said screen and pan, and comprising a rod provided with a yoke portion, a cam arranged to move said rod in one direction of its reciprocal movement, an abutant, a spring arranged to throw said rod in the opposite direction of its reciprocal movement, a clip depending from said screen and pan, a threaded end on one end of said rod extending loosely through said clip; a nut on each side of said clip on said rod; a resilient buffer on each side of said clip between each nut and the adjacent side of said clip, whereby a spring-compensating connection is made between said reciprocating rod and said screen, and pan, and means for rotating said cam, substantially as described.

801,329. Concrete-Mixer. Hugh Miscampbell, Duluth, Minn., filed Oct. 23, 1902. Serial No. 128,457.



Claim—In a concrete-mixer, the combination with a base of a revoluble floor mounted thereon, a non-revoluble frame positioned above said floor, stirring-plows depending toward said floor from said frame and provided with beams pivotally secured to said frame at their forward ends, limiting-loops secured to said frame and loosely engaging said beams intermediate of their ends, and cushions interposed between said beams and said frame, substantially as described.

802,354. Process of slaking lime and lime-containing substances and certain novel products of said process. Carleton Ellis, New York, N. Y., filed July 18, 1905. Serial No. 270,193.



Claim—The process of slaking quicklime to a dry condition which consists in moving a body of such lime through and beyond a zone of water-supply before hydration to a material extent takes place in such body, supplying water to the lime while in said zone in amount merely sufficient to slake it to the desired extent, and thereafter continuing the for-

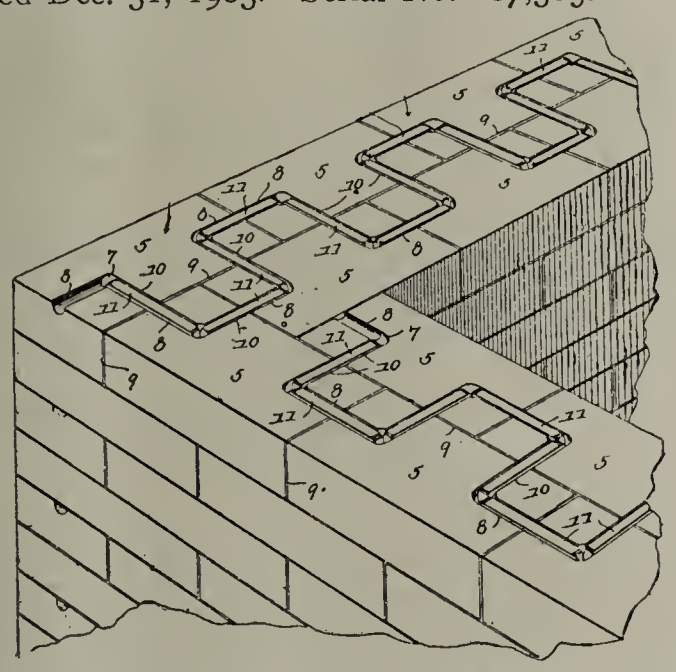
ward movement of the lime and simultaneously stirring it while hydration continues.

802,608. Manufacture of lime and sand bricks or blocks Ernest Stoffler, Zurich, Switzerland. Filed May 16, 1904 Serial No. 208,231.

Claim—The herein-described process for the manufacture of bricks or blocks of lime and sand, which consists in grinding sand and caustic lime together, so as to fracture the sand particles, with the addition of only so much moisture as will form a nearly-dry mixture and producing a chemical combination between thme lime and fractured sand particles in nascent condition, then molding the mass into blocks without further treatment, substantially as described.

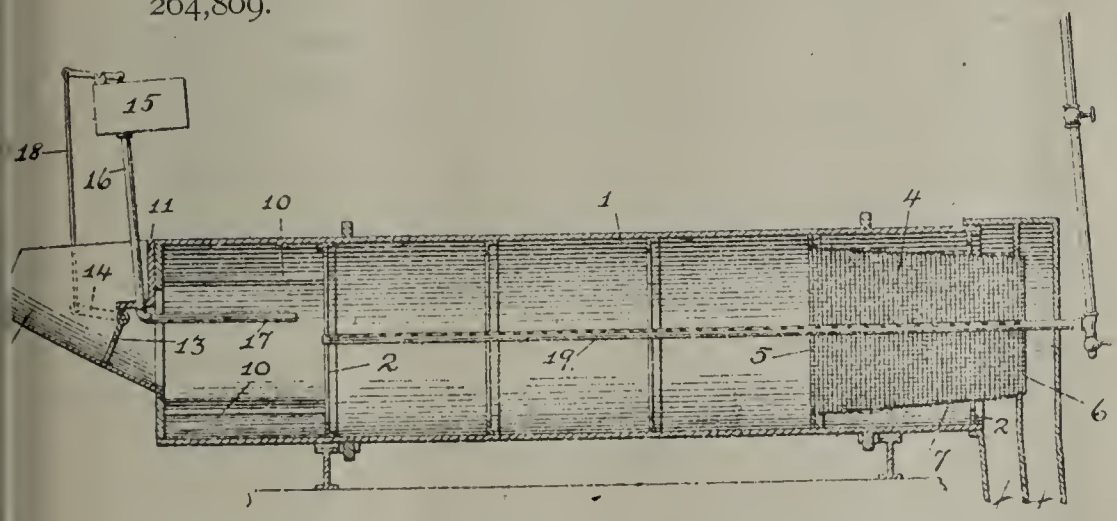
The herein-described process for the manufacture of bricks or blocks of lime and sand, which consists in grinding sand and caustic lime together so as to fracture the sand particles, introducing steam into the mixture while it is being ground to simultaneously supply moisture thereto, facilitate the chemical combination of the sand and lime, and partially harden the mass during the grinding operation, and producing a chemical combination between the lime and the freshly-fractured sand particles in nascent condition, substantially as described.

802,566. Building-Brick. Charles A. Harris, Massena, Iowa, filed Dec. 31, 1903. Serial No. 187,385.



Claim—A brick provided with a plurality of augularly-disposed seating-grooves, and depressions or sockets formed at the intersection of said grooves.

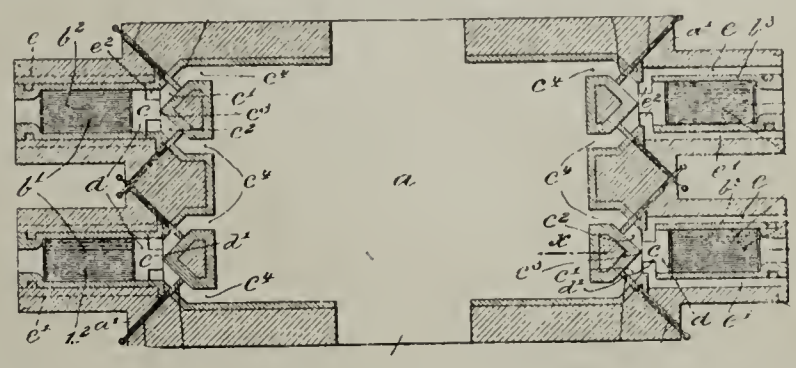
803,506. Process for Hydrating Lime. James Reaney, Jr., Sherwood, Md. Filed June 12, 1905. Serial No. 264,809.



Claim.—The process of hydating lime consisting of first moistening the mass then agitating the moistened mass to cause the heavier particles to gravitate to the bottom and the lighter particles to rise to the surface of the mass and then removing the lighter particles from the surface of the mass.

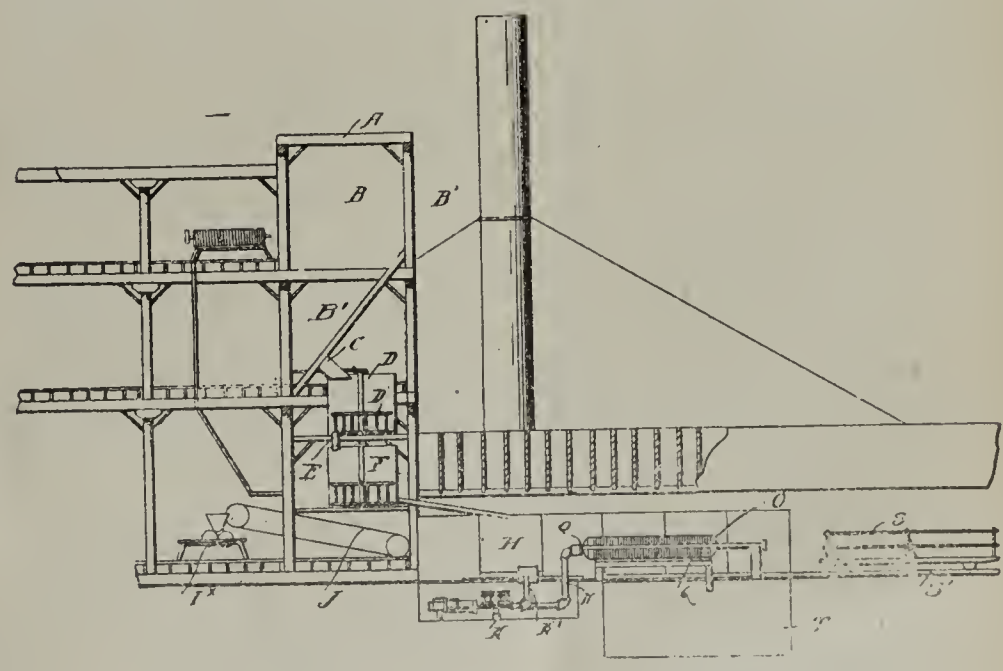
The process of hydrating lime consisting of moistening the mass then agitating the moistened mass to cause the heavier unhydrated particles to settle to the bottom of the mass and the lighter hydrated particles to rise to the surface and pass off while the heavier particles are held in check and passing the separated hyrated particles over a screen.

803,236. Calorific Kiln. Edwin A. King, Philadelphia, Pa. Filed June 3, 1905. Serial No. 263,549.



Claim.—In a kiln, a fire-chamber formed by an extension of the front walls and having a grate, flues arranged in the front walls, a combustion-chamber arranged in said wall extension and forming a main flue interposed between said fire-chamber and flues and having a floor elevated above said grate to form a bridge-wall for the same, airflues arranged alongside said fire-chamber and below said bridge-wall and deflected into and rising in said wall centrally, opposite the flaring wall portions of said flues, said flues adapted to heat the air by conducting the same into and through the bridge-wall to permit of a complete combustion of the products of combustion by rising in said chamber and commingling with the products of combustion therein, and dampers arranged in said flues and adapted when actuated to permit of the unequal distribution of the heat of said chambers to two arches of brick in said kiln or all the heat into one of the arches of said brick.

803,904. Method of Hydrating Lime. John G. Jones, Carthage, N. Y. Filed Mar. 13, 1905. Serial No. 249,909.



Claim.—A method of hydrating lime, consisting in slaking burnt lime with an excess of water, separating a large percentage of the water from the lime, and afterward passing the latter through a moist-air drier, as set forth.

A method of hydrating lime, consisting in slacking burnt lime with an excess of water, forcing the lime in a semifluid state into a filter-press, applying pressure to the latter to relieve the lime of a large percentage of its water forming a saturated solution of lime utilized for slaking the burnt lime, and afterward passing the lime as it issues from the press, through a moist-air drier, as set forth.

JURY BEGINS NEW "BRICK TRUST" INQUIRY.

Another "trust" investigation was inaugurated in Chicago. The Cook county grand jury with great secrecy and after an apparently elaborate preparation, began an inquiry into the brick combination operating in the city.

Nearly seventy-five witnesses were called before the jurors during the afternoon and many of them gave their testimony. They included employes of the Illinois Brick company and its constituent concerns and men interested in the smaller, rival, "nontrust" brickyards. With them they brought books and documents and a mass of other evidence.

While State's Attorney John J. Healy and Assistant Harry Olson, who have the cases in charge, refused to give any information as to the nature of the evidence, it is said that it is along the line of showing the existence of a conspiracy to monopolize trade and a conspiracy to injure competitors through secret and illegal agreements with labor unions.

President George C. Prussing of the Illinois company, called the "trust," was indicted by the July grand jury on a count involving the latter charges. Mr. Prussing's guilt or innocence has not been established in court. He has not had his day in court. The date of trial has not been set. The new investigation has been put on before the old one really had its end.

In part explanation of this it is said the indictment of Mr. Prussing has been found faulty and the jurors have been asked to vote new true bills against him. The alleged defect in the old indictment was discovered, according to the report, after the new investigation was under consideration.

In the new inquiry, it is said, the labor end of the Illinois company will receive renewed attention. Explanations again will be sought for the $25,000 labor fund entered in the books of the company. The names of John H. Gray, superintendent of the sales department, and of Charles Hank, business agent of the brickmakers' union, and of Patrick McMahon, business agent of the brick teamsters, again will come to the front. It was said these three men had the handling of the mysterious $25,000.

Detectives from the state's attorney's office have been serving subpœnas in the new investigation for a week. Their activity was noted before their task was half finished and many of the men wanted are reported "missing." Their friends are not searching for them. Only the writ servers are seeking.

As the result of the detectives' work, representatives of the following corporations appeared to testify before the jurors:

American Brick Co.	Illinois Brick Co.
American Sand, Lime and Brick Co.	A. W. Kelly & Co.
William Bach & Sons Co.	Kemnitz & Schneider.
Charles Bonner & Co.	Labahn Brick Co.
Alexander S. Burke Co.	John M. L. Sexton.

It was shown, it is said, that by means of the alleged conspiracy, the following competitors, rated as "independents," had been sufferers:

Lebahn Brick Co.	Lake View Brick Co.
William Bach & Sons.	Kemnitz & Schneider Co.
C. J. Heiman & Co.	

The state introduced evidence, it is said, tending to show that the "trust" enjoys secret understandings with the labor men whereby competitors are harassed by union complications. Frequent strikes have been called, it is said, on the outsiders on flimsy excuses. The Illinois company, however, has been immune from labor difficulties.

As showing how the labor complication has been worked out, evidence is said to have been introduced to show that the $25,000 fund was distributed judiciously among certain union "leaders." Several are declared to have been carried on the pay roll of the company.

This phase of the matter was the basis of the July indictments. The new element is said to be the charges of combination in restraint of trade. The independents are declared to have told the jurors much bearing on this point. They are said to have given information as to the inner organization and workings of the "trust," of the inducements offered them to join it, and of the alleged ruinous competition they suffered when they declined.

The witnesses who could not be heard by the jurors were let go at the end of the day after being warned not to fail to appear again this morning at 9:30 o'clock, when the investigation will be continued. Some were profuse with excuses, trying to show Mr. Healy why they should not be called on to give testimony. None, however, was excused.

"While the case is before the jury," Mr. Healy said, "I cannot discuss it. Nothing can be given out until the investigation is ended."—*Chicago Tribune.*

OUTPUT OF BERLIN BRICK YARDS.

The output of the Berlin, Ct., brickyards has been the largest in the history of the yards, the total output being 77,000,000 brick. The prices too have been good, the average for the season being $7 a thousand, and the present price ranging from $7.50 to $8. The output of the yards is as follows: C. P. Merwin, 13,500,000; W. L. Davis, 8,000,000; R. O. Clark, 8,000,000; Richard Murray, 7,250,000; M. E. Jacobs, 7,500,000; Standard, 7,150,000; American Brick Company, 7,000,000; Donnelly Co., 7,000,000; Towers Brothers, 6,600,000; John Holmes, 5,000,000. On the basis of $7 a thousand the amount of money in the year's business amounted to $539,000. In addition to the Berlin yards are those between New Britain and Hartford which had an output this year of about 30,000,000 brick. About 4,500,000 brick were made in Southington this year, which practically completes the output of brick for Hartford county. The total value would be about $780,500. A leading brick man said that the business had been unusually good for the past three years. They expect a good season next year, and then expect a falling off in the demand.

The Ross-Keller Triple Pressure Brick Machine Co., of St. Louis, Mo., have closed a contract for a complete four-mould dry press plant to be installed at Comanche, I. T., for Messrs. J. T. Quitt and J. A. Cameron and B. G. Patterson. The machinery is now being shipped and the plant will be in operation as soon as the equipment can be installed.

CRUSHED TO DEATH AT THE WESTERN BRICK COMPANY PLANT

E. S. Gray, the well-known Danville, Ill., coal operator, was killed at the Western Brick Co. plant, west of the city. He was crushed to death under an old traction engine that was dumped down an embankment to get it out of the way.

For some time past Mr. Gray had been superintending the work of getting out shale for the brick company. Since the brick plant was built the old traction engine, long out of service, had stood near the factory and Supt. S. S. Curry decided to have it disposed of by throwing it down an embankment where other rubbish was cast. The engine was a small one and two men were directed to dispose of it. Mr. Gray saw the men at work and volunteered to hitch one of the teams to the engine and pull it to the top of the hill. This was done. The machine no sooner reached the embankment then it turned over and went down. Mr. Gray stumbled just as the engine turned over, and fell under it. A portion of the engine struck him on the head and his head and face were fearfully crushed. He lived but a short time after the accident. The ambulance was summoned with the intention of taking deceased to the hospital but he died before the institution was reached. The body was taken to the home on Logan avenue.

When the engine went over the embankment the team attached was pulled down with it but the animals were not hurt.

Coroner Speakman was notified of the death and held the inquest.

E. S. Gray was one of the best known business men of the county and was one of the substantial citizens of Danville. Many men have been employed by him and no man in this county was held in higher regard by the laboring class than Mr. Gray, and to them particularly the untimely death comes with sorrow. Mr. Gray has superintended much construction work of various kinds and was a man of ability in this line. The deceased for years conducted a feed establishment and did so until his coal business grew to such extent that he was compelled to dispose of the other.

Deceased was born in Ohio and was 64 years of age.

RED RIVER VALLEY BRICK CORPORATION MADE 13,000,000 THIS YEAR

The last kilns in the four brick yards owned by the Red River Valley Brick corporation, Grand Forks, N. Dak., will be burned next week. The corporation has manufactured thirteen million brick this year, but little more than was manufactured a year ago. The demand for brick continues, and it is not likely now that as many brick will be carried over as was the case last winter, when five million brick represented the stock on hand when building operations began this spring. Shipments have been made to every section of the state this year and the business has been a very satisfactory one. With the large number of buildings in course of construction and to be started within a few days the demand is expected to continue for some time. By another year the corporation will probably make extensive improvements that will allow the storage of a much larger stock than is possible now.

A FUTURE MANUFACTURING CENTER OF NEBRASKA

In its investigation of the natural resources along The North-Western Line the Industrial Department of that company has had its attention called to a situation at a northern Nebraska point that in a way indicates what the future of this western country may provide to the industrial world. The point referred to is a city having a population of about 1,200 people located on one of the great rivers of the state. This river affords at this location a very desirable water power site with a capacity estimated at 4,000 H. P. This splendid power could be used in many ways to great advantage. It would be especially valuable for the generation of electric power that could be turned to manufacturing purposes. As, for instance, if the splendid deposits of glass sand that are found close by, and which by analysis show 98 per cent silica, could be used for the manufacture of glass products by an electric process, the current generated by water power, a great opportunity would seem to be available.

With reference to the manufacture of glass by the electric arc, a translation from a German process shows that it is possible to reduce the capital necessary for the erection of a plant, giving a simpler, cleaner and quicker process and a considerable saving of heat, energy, and a pure product. The workmen are not subject to the continual heat; also it is not necessary to continue the work during the night as with the ordinary coal or gas methods as the work may be interrupted at any time without incurring such enormous losses of heat. If the progress in the west will in the near future show that a system of this kind has been adopted as a result of the natural advantages of country offers, then will this Nebraska point no doubt appear as one of the leading glass producing points of the continent. Among other resources of this location are a supply of fullers earth, terra cotta clay, kaolin, fire clay and marl suitable for Portland cement manufacture.

The west has many things that can be told about with interest to people seeking favorable opportunities. It is along this line of work that the great railway system named is turning its attention, affording information that will tend to upbuild, develop and populate the western country in a way that may be stated as benefiting the whole nation.

KREMITE; A NEW BUILDING MATERIAL

Kremite, the new building material, is made in a factory near St. Petersburg, Russia, and consists of powdered clay, sand and fluorspar melted together at a high temperature. The molten mass may be used like iron for molded castings as well as blocks. It is well adapted for architectural and artistic purposes, yielding such products as hollow brick for buildings and stoves, fancy, marble-like brick, tiles for floors and sidewalks, and even thin, corrugated plates for roofs.

On page 61 of this issue is the announcement of a new firm in the field. In the west and southwest they are well known. They are bound to get their share of the trade.

CLAY RECORD.

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SUBSCRIPTIONS.

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Papers are not stopped at the end of subscriptions unless the subscribers order them so and pay up the arrearages.

ENTERED AT THE CHICAGO POST OFFICE AS SECOND-CLASS MATTER.

Vol. XXVII. NOVEMBER 29, 1905. No. 10

"I like to read American advertisements. They are in themselves literature, and I can gauge the prosperity of the country by their very appearance."—William E. Gladstone.

When times are dull and people are not advertising is the very time that advertising should be the heaviest. Ninety-nine out of every hundred merchants advertise most when there is least need of it, instead of looking upon advertising as the panacea for their business ills.—John Wanamaker.

CONVENTIONS.

The twenty-eighth annual meeting of the Illinois Clay Workers' Association will be held at Champaign, January 23, 24, 25th. Headquarters at the Beardsley.

The sixth annual meeting of the Wisconsin Clay Workers' Association will be held at Menominee, date not set.

The twenty-sixth annual meeting of the Iowa Brick & Tile Association will be held in Des Moines, January 10th, 11th and 12th, 1906.

The fourth annual meeting of the Ontario Clay-Workers' Association will be held at Hamilton, Ont., December 13th and 14th. Headquarters will be at the Royal.

The second annual meeting of the National Association of Manufacturers of Sand-Lime Products will be held at Detroit, Mich., December 5, 6 and 7, 1905. Headquarters at Hotel Cadillac.

Experience begets wisdom—but usually too late in the game to be of any value.

The right goods will always bring the right price if the story be told in the right way.

The CLAY RECORD is the only semi-monthly clay journal printed in America—one dollar per year.

Every time a button drops off it puts more responsibility on the others. And advertisements are the buttons that hold up a man's business.

Wise is the man who knows himself thoroughly, and doesn't try to find out things about his neighbor.

From whatever standpoint it is viewed, whether religious or otherwise, the season of "Thanksgiving" has underlying it a philosophy both wide and deep. The strenuous times call for our common days and Sundays, and would demand all of our time "year's end to year's end" were it not for a certain oneness of sentiment among the people, and as one man, forcing and taking certain seasons during which there is cessation from labor and the time given over to social pleasure, quiet reflection and to indulgence in reminiscence.

And were it not for these periods the people would go mad, and would not "live out half their days."

The period is upon us, commonly called "Thanksgiving." Its suggestions are: To stop and consider; to review what has transpired since the last season; to recount the mistakes made that they may be avoided in the future; to acknowledge the successes gained and at the same time manifest proper appreciation of these in a display of the true spirit of thankfulness.

Taking it by large the prosperity of the nation, the state, and the people, during the year has been such as to demand full recognition and acknowledgment.

And more, the causes leading to this prosperity should have careful consideration, and at the same time the dangers attending it should not be overlooked, and the "breathing spell" will allow for all this.

We unite with our readers in the spirit of the season, and with them acknowledge the blessings which have come to us, as well, with due thankfulness, "the source whence they came."

Every since it has become known that President Roosevelt had worked out a clearly defined "policy" looking to the regulation of the railroads of this country, now known as and euphoniously called the "rate" question, we have been looking for, and expecting to see, opposition to come from a certain quarter, and at last it has made its appearance. We are told in the newspapers that a delegation from the several union organizations among railroad employes has presented a petition to the President praying him not to pursue his policy regarding regulation of the railroads, and particularly regarding the matter of rates, alleging that any interference with these would result in a reduction of wages, etc. We believe we are not making a false statement, when we allege that this opposition, and the presentation of this petition, originated with, and was prompted by the managers of the railroads, they knowing this was a vulnerable point with the men and took advantage of it.

It is to be hoped, yes, we have a right to expect that the President will adhere to his oft repeated declaration of a "square deal" and probe, without fear, to the bottom of this whole railroad question, including the matter of rates, and secure to the people what is justly due them.

There is no doubt a readjustment of existing rates along equitable lines will result in the reduction of the receipts or earnings, but it must be borne in mind the railroads are enormously and scandalously over capitalized, and upon this excessive capitalization they are paying dividends.

Now our contention is, that, if this capitalization be reduced to a point that will cover a fair valuation of the properties, a considerable reduction in rates may be made, and at the same time allow the railroad companies to pay reasonable dividends on their stocks and bonds representing a fair valuation, and at the same time not disturb the present wages of the men.

The difficulty of drawing the line between what is political and what is not (and the CLAY RECORD has made it a rule to steer clear of the former in its reading matter), is admitted. And it does seem that this difficulty is increasing with the development and expansion of the nation. Never at any one time in its history were there so many and such difficult problems confronting its citizens.

These problems concern their future well being and prosperity, are vital, and are not political in the ordinary sense in which that term is used, yet they can not be discussed without traveling very closely to the line-political if you do not cross it.

Probably the most pressing and important problems, speaking generally, is the corporation, or particularly, the railroads. The trend seems to be in the direction of national control and regulation. If this be concluded upon and put on the statute book, in our humble opinion, it would be an egregious blunder, and would reduce the people to a state of servitude so far as their dealings went with the railroads. The absorption of connecting lines now going on the consolidation of parallel lines of railroads, the centralization of control in the hands of a few men, to our mind, is being done in anticipation of national control, and if brought about, controlling the senate as they now do, made up as it is, if not wholly at least in part, a majority, of railroad attorneys, it may be taken for granted there will be no laws that will injure them, and any laws affecting them will be of a nature that will benefit them. The regulation and control of the corporation, whether railroad, insurance company, an industrial or manufacturing corporation should remain in the several states, and applying to foreign as well as to local organizations. It has been found wise to invest the municipality with absolute control of its internal affairs and the same reasons hold good when it comes to the control and regulation of corporations doing business in any one state. To submit such matters to the Elkins', Aldrich's, Foraker's and men of their ilk means as we said above the undoing of the people and their being reduced to a state of servitude so far as their relations went with the railroads.

FIRES, ACCIDENTS, DAMAGES AND LOSSES.

Thieves entered the plant of the Millville (N. J.) Sand & Brick Co. and finding no plunder wrecked the machinery.

The St. Paul (Minn.) Brick Co. has settled the damage suit for $1,000 started by Mrs. Anna Kadlec, mother of Frank Kadlec, a boy that was injured at the plant.

Melvin Davis, 370 Warner road, Cleveland, Ohio, was severely injured in a repress at the plant of the Newburg Brick Co. He was taken to the St. Alexis hospital.

O. L. Hagard, assistant superintendent of the Southern Clay Mfg. Co.'s plant at Coaldale, Ala., was shot and fatally injured by an employe of the plant.

E. S. Gray, a prominent coal operator, met death at the plant of the Western Brick Co. at Danville, Ill., while helping to remove an old engine.

The Lower Brick Co., Sioux City, Iowa, has been sued for $7,500 damages for the death of James W. Vaugher, who was killed by being run over by the cars while at work for the company.

Attorney Charles Flowers, in the name of Attorney General Bird, asks the Wayne County Circuit Court for an injunction to restrain the city of Detroit from spending any of $50,000 appropriated for a municipal brick plant.

Three men narrowly escaped death by the falling in of one of the corners of a kiln at the plant of the Purington Paving Brick Co., Galesburg, Ill. All are sorely bruised and cut up.

Walter P. Grath has filed suits against the Mound City Roofing Tile Co., at St. Louis, Mo., to the amount of $20,500, to compel the company to give a trust deed to him on account of going security for the company to that amount.

The plant of the Humphrey Brick & Tile Co., at Brookville, Pa., was totally destroyed by fire, the flames broke out in the dry kiln and as there was no protection everything was destroyed. The loss will be several thousand dollars with no insurance.

Gilbert Olsen, an employe of the Traverse City (Mich.) Brick Co., while crossing a trustle on the Pere Marquette railway, was struck from behind by a man with a billy, robbed and thrown into Bordman Lake. He struck the water near a log boom which he grasped and was saved.

CHRISTMAS HOLIDAY EXCURSION RATES

Via the Nickel Plate Road between Chicago and Buffalo. Dates of sale December 23, 24, 25, 30 and 31, 1905, and January 1, 1906, at a fare and a third for the round-trip, with return limit of January 3, 1906. Through train service to New York City, Boston and other Eastern points. No excess fare. Individual Club Meals served in Nickel Plate dining cars. Three through trains daily from La Salle and Van Buren St. Station, the only depot in Chicago on the Elevated Loop.

Wm. E. Fitzgerald, Coxsackie, N. Y., has bought from the Henry Martin Brick Machine Mfg. Co., Lancaster, Pa., one of their modern equipments of 50,000 brick daily capacity.

OBITUARY.

Lyman W. Phillips, aged 72 years, a retired brickmaker, died suddenly of heart disease at Marietta, Ohio.

Peter Brookey, a brick manufacturer, died at Frederick, Md., age 72 years. He was born in Prussia and came to this country when a child.

William H. Umpleby, president of the Keystone Pottery Co., died at his home in Trenton, N. J., aged 58 years. He was an expert in sanitary ware.

John E. Perry, one of the organizers of the New England Brick Co., Boston, Mass., and later of the Perry Brick Co., died at his home in Cambridge from the effects of an operation for appendicitis. Mr. Perry was a prominent man in the building trade and politics of Boston.

Henry Anson, a brick manufacturer and one of the founders of the city of Marshalltown, Iowa, died of pneumonia at his home in that city. He was 78 years old and a father of "Cap" Anson the baseball genius of Chicago who was the first white child born in Marshall county, Iowa.

Dr. Henry H. Keller, president and general manager of the Choctaw Pressed Brick Company, who was elected mayor of South McAleseer, I. T., by a heavy majority in 1903, is dead. He was formerly connected with the Ross-Keller Brick Machine Co., of St. Louis, Mo.

DALE BRICK PLANT SOLD TO GOODWINS

The plant, business and good will of the Dale Brick company, Des Moines, Iowa, has been sold to the Goodwin Tile and Brick company. Much of the real estate owned by the Dale company was sold to Heathershaw Bros.

The plant is located on the Rock Island tracks in the southwest part of the city and is one of the largest in the city. It has been operated entirely in the manufacture of building brick. Its capacity has been about 35,000 finished brick a day.

Under the transfers seventy-seven acres, exclusive of the plant and clay pits, is transferred to Heathershaw Bros. and twenty-one acres go to the Goodwin company. The consideration for the real estate amounts to about $6,000, but that for the plant is not made known, though it is understood to approximate about $40,000.

The Goodwin company now operates a plant about two miles down the river from the Dale plant and is also interested in plants at Grand Junction and in Panora. It will remodel the Dale plant and continue its operation, but will not make brick. Instead the plant will be run entirely on hollow ware, turning out tile, drain pipe and hollow building block. The other plants of the Goodwin company will be conducted as at present. It is their intention to increase the output of the plant considerably.

The Dale company was composed of Messrs. Frank and Edward E. Dale. The Dales expect to remove from Des Moines and will probably engage in the clay working business at Scranton, Pa.

MORE BRICK PLANTS

The directors of the U. S. Brick Company held a meeting at their office, in the Penn'a building, Philadelphia. President Albert A. Gery, of Reading, presided, and the minutes were kept by J. Milton Miller. Reports were read from the company's eight plants, showing all were filled up with orders. Plans for additional plants—one in New York and the other in Baltimore—were discussed.

NEW COMPANY WILL OPERATE PATTON BRICK PLANT

A stock company, with D. Stuart Miller, of Owensboro, Ky., at its head, has bought the Patton brick plant at Cloverport for the purpose of operating it. The company has a working capital of $20,000 and will put the plant in operation as soon as it can be overhauled. The work of overhauling will be begin in about two weeks.

The purchase of the plant was made from the Columbia Finance & Trust company, of Louisville, by Mr. Miller and the other members of the company, the deal being closed last week.

Articles incorporating the company, under the name of the Miller Brick and Tile company, were filed with the Secretary of State. The capital stock is placed at $40,000.

D. S. Miller is the president of the company, Hywel Davis is vice-president, H. S. Miller is secretary and treasurer, and D. Miller, Jr., is general manager. The principal office of the company will be located in Cloverport.

The company will make common and press brick and roofing.

For several weeks prior to the purchase of the plant Mr. Miller was engaged in the organization of his company.

It will very probably take the greater part of the winter to overhaul the plant, as some parts will have to be rebuilt. The styles in the kilns, machinery, etc., and the various processes through which the brick must go before it reaches the finished stage, will not be apt to undergo changes of much consequence.

The Patton brick plant is vrey valuable property, though there have been a number of periods during which it was not in operation. This condition has been due, in a large part, to the number of changes there have been in the controlling interests. The Central Clay Product company owned the property before it passed into the hands of the Columbia Finance & Trust company about two years ago.

PALMER RIGHTS ARE SELLING

There is no diminution in the demand for machinery to equip plants for making hollow concrete building blocks, and the H. S. Palmer system continues to be prominent in the concrete-block industry. On a recent trip, H. S. Palmer of the Harmon S. Palmer Hollow Concrete Building Block Company of Washington, D. C., sold excxlusive rights to his system in Lackawanna County, Pennsylvania, and three machines; one of the purchasers being A. T. Troutwine of the Carbondale (Pa.) Machine Works. He also sold rights to Camden County, New Jersey, and two machines to George A. Aldrich of Philadelphia. These sales indicate that the H. S. Palmer system is continuing to be recommended to those who think of entering into the new industry and who investigate the Palmer patents.

POTTERY COMPANY OFFERS PRIZES

The Trenton Potteries company, Trenton, N. J., which operates the Enterprise, Crescent, Ideal, Delaware and Equitable plants will distribute $1,000 among its employes in prizes for the best suggestions offered to the firm relative to the successful manufacture of its ware and the management of its plants.

BRIGHT PROSPECTS AHEAD FOR FIRE BRICK PLANTS

Just at present there is an almost unprecedented demand for firebrick throughout the country owing to the resumption of nearly all the big steel plants and every firebrick plant will be running full blast as soon as the necessary repairs can be made. Plants that have been idle for many months will be placed in operation and smoke will soon be issuing from the stack of every brick plant in Scioto and adjacent counties. This announcement was made by a prominent brick manufacturer, who says that his firm has already received enough orders to operate every one of their immense plants steadily for the next three months. Simpson Bros. the East End machinists, who do considerable work for the brick companies received more than enough orders to keep their increased force of mechanics busy until next spring. The plants in Sciotoville, Scioto Furnace, Oak Hill and South Webster that have been idle will be resumed in all departments and the outlook in the brick business was never more gratifying.—Portsmouth Blade.

A CONSOLIDATION AT MICHIGAN CITY

Plans are making for the consolidation of two of Michigan City's largest brick manufacturing concerns, one a maker of sand brick, the other a manufacturer of clay brick. Those who are engineering the deal are organizing a corporation to be capitalized at $200,000. The bulk of the stock will be taken by the two concerns entering the deal and the remained will be sold at par, and it is anticipated there will be a lively demand for it. The proposed consolidation will not mean the erection of new plants, it is understood, but will probably result in an extension of business and an increase in the amount of business for the new concern to proportions greater than the present combined output. It is given out that $126,000 of the capital stock has been taken. The details of the merger have not been arranged.

ANOTHER YEAR OF PROSPERITY WITH THE PROSPECTS BRIGHTER THAN EVER

The annual meeting of the stockholders of the Pennsylvania Fire Brick company was held at the general offices of the company at Beech Creek, Pa. From the report of General Manager J. A. Bickford it was learned that the past year has been a very successful one and the prospects for a continuance of a large business for the ensuing year are excedingly bright. Orders are already booked to keep the works going for several months.

New by-laws were adopted and the following board of directors elected to serve for one year: J. P. Wynn, T. M. Stevenson, Jerome Moltz, John C. Clark and Arthur D. Fiske. At a meeting of the directors T. M. Stevenson was re-elected president; Warren Wynn secretary and treasurer; J. P. Wynn general manager, and Arthur D. Fiske asistant general manager and sales agent.

PROGRAM OF THE ONTARIO CLAY WORKERS ASSOCIATION MEETING AT HAMILTON, DECEMBER 13-14

The morning of December 13 devoted to the reception and registration of Clay Workers.

AFTERNOON SESSION.

Address of welcome by Mayor Biggar.

President's annual address, G. W. Moody, Highgate.

Report of Secretary and Treasurer.

Discussion—Watersmoking and burning of clays.

Discussion—Economical Generation and use of power in Brick Plants.

Discussion—Testing of Clays.

Lecture by Professor Baker of Ontario School of Mining.

MORNING OF DECEMBER 14.

Devoted to visiting Hamilton Clay Working Plants.

AFTERNOON OF DECEMBER 14.

Discussion—Manufacture of Dry Pressed Brick.

Discussion—Local Association of Brick Workers and how to run them.

Discussion—Tidiness and Cleanliness on a brick plant.

Discussion—Best Methods of Preparing Clay for Machines.

Discussion—How to Interest the Farmer in Drainage.

Election of Officers.

Banquet by Hamilton Clay Workers.

C. H. BECHTEL, Sec'y.,
Waterloo, Ont.

FULLER'S EARTH AND PUMICE DUST

Fullers earth and pumice dust seems to be on a boom at O'Quinn, Tex. More and better deposits have lately been found, and more speculators and promotors are coming in, but the owners seem to prefer to deal direct with consumers, miners and dealers.

The Atlantic Efrosite Co., who have lately been shipping raw clays to New York, are now making arrangements to prepare all kinds of clay and kaolin for the market.

VERY LOW EXCURSION RATES FOR CHRISTMAS HOLIDAYS

To all points on the Nickel Plate Road between Chicago and Buffalo. Dates of sale, December 23, 24, 25, 30 and 31, 1905, and January 1, 1906, with limit returning January 3, 1906. Rate one and a third fare for the round-trip. Individual Club Meals, ranging in price from 35c to $1.00, and Mid-day Luncheon 50c., served in Nickel Plate dining cars; also service a la carte. No excess fare. Chicago city ticket offices, 111 Adams St. and Auditorium Annex. Depot, La Salle and Van Buren Sts., the only depot in Chicago on the Elevated Loop.

The Ross-Keller Triple Pressure Brick Machine Co., of St. Louis, Mo., have just completed the installation of a four-mould dry press plant for the Lyle Rock Co., of Kansas City, Mo. The material is a fine shale which has been tested by the Ross-Keller Company and produces a high grade pressed brick.

The Penn Supply Co., 301 Market street, Camden, N. J., has been incorporated with $20,000 capital stock by William Bates, Samuel F. Wheeler and F. C. Meetteer.

SAND OR LIME-BRICK OR BLOCK NEWS.

Little Falls, N. Y., is to have a plant to make into brick the rock that abounds in that section.

The new brick plant at Des Moines, Ia., known as the Eureka Brick Co., is now turning out front brick by an entirely new process.

A company to make sand-lime brick at the rate of 1,000,000 a month, is being formed at Portland, Oregon. J. T. Ulhorn, of San Francisco, Cal., is interested.

The Fremont (Ohio) Brick Mfg. Co. has received an order for a one-half million of sand-lime brick to be used in the construction of a new brewery at Ashtabula, Ohio.

A movement is on foot to organize a $200,0000 stock company for the purpose of merging the two sand-lime brick plants at Michigan City, Ind.

The Cement Tile & Tile Mold Mfg. Co., Sac City, Iowa, has obtained a contract to supply eighty-five carloads of cement tile for a Calhoun county ditch.

Harry A. Walters and H. J. Cortright will build a factory at Marshall, Mich., in which to build cement block machines after patents of Mr. Walters.

The Commercial Club of Grand Island, Neb., has before it the proposition to start a sand-lime brick plant and a committee has been appointed to take the matter in charge.

In looking over the advertisements of this issue of the CLAY RECORD be sure to notice all of those that are advertising machinery for making sand-lime brick.

John P. Lamb, president of the board of public service at Newark, Ohio, will go into the sand-lime brick business as soon as his term of office expires. The plant will be located two miles east of the city.

A. J. Warren, of Brinson, Ga., has begun work on his cement brick plant in West Bainbridge. The capacity of the plant will be 40,000 brick per day, and an investment of $50,000 will be made.

The Silicated Brick Co., whose plant is at Castle Rock Colo., has been shut down for some time making repairs and improvements, but is now started up again with an increased capacity.

The Sibley (Mich.) Brick Co. are working night and day on their contracts. The company is now furnishing 3,000,000 sand-lime brick for the Morgan & Wright Rubber factory at Detroit.

The Georgia Smith farm at Ballston Spa, N. Y., has been sold to David B. Lyon, of Schenectady. The new owner expects to ship the sand, also to erect thereon a sand-lime brick plant.

The Federal Brick Co., New York, has been incorporated with $100,000 capital stock by F. Angelo Gaynor, Wm. B. F. Rogers and Addison C. Ormsbee, of New York, and others.

The plant of the Ft. Wayne (Ind.) Pressed Brick Co., which was recently burned to the ground, causing a loss of $40,000, will be rebuilt as soon as the insurance adjusters have finished their work. The new buildings will be made fire-proof.

MISCELLANEOUS ITEMS.

The Central Brick Co. has been incorporated at San Francisco, Cal., with $3,000,000 capital stock.

The Brazil (Ind.) Clay Co. has turned out its first kiln of brick, the same being a perfect success.

A contract was closed the 14th of Nov. for the establishment of a brick plant at Mound City, Kansas.

On account of excess railroad rates the Chandler (Okla.) Brick works has been forced to suspend operations.

The Hart County Clay, Oil & Mineral Co., Horse Cave, Ky., has been incorporated with $150,000 capital stock by R. T. Smith, W. P. Comer and S. S. Gorby.

The Utah Portland Cement Co., Salt Lake City, Utah, is to increase the capacity of its plant to double its present size.

Dr. Sam Russell will erect a plant at Macomb, Ill., for the making of tile, brick and other clay products. The construction of the plant will start in the spring.

The Citizens League at Bunker Hill, Ill., are negotiating with an Ohio company with a view of having a pressed brick manufacturing plant located there.

C. M. Steele, Statesville, N. C., has been granted a patent on an improvement on the brick truck, which his father, G. C. Steele, obtained a patent on some time ago.

Hot Springs (Ark.) Brick Company has been incorporated with $25,000 capital stock by Brown & Looney, brickmakers. They are now installing additional machinery.

The Simpson Brick Co. at Carbon, Ind., has added five new kilns to their plant besides putting in other extensive improvements.

The Standard Brick Co., Newark, N. J., are installing a "Martin" dryer of 50,000 brick daily capacity in combination with the "Martin" automatic delivery system.

The Geo. Frid Company, Hamilton, Ontario, are installing a "Martin" equipment, including a dryer and automatic delivery for handling their soft-mud brick.

Fred A. Helbig, of the Kirby Lumber Co., Houston, Texas, in digging for a well found some fine clay that will make vitrified brick, etc., and the matter is now before the Houston Business League.

John B. McGarrisk, Des Moines, Ia., has sold all his interests in the Capital City Brick & Pipe Company to John Mardis and C. H. Myrick. The office is now at Omaha, Neb., where a large contracting business is carried on.

The Mountain Valley Pottery Co., Century Bldg., St. Louis, Mo., has started its temporary art plant at Hot Springs, Ark., and are arranging to build the permanent plant where they will make all classes of clay goods, including terra cotta and brick.

The Rossville Brick Co., New York, has been incorporated with $150,000 capital stock. Incorporators: Henry Meyer, 55 Norwood Ave.; P. J. Carlin, 113 Clinton Ave.; Edward D. Kruss, and R. J. Kenworthy, all of Brooklyn, Chas. Kneipp, 500 E. 82d St.; Allen H. Sparrow, 15 Whitehill St., New York.

Franklin, Tex., is soon to have a brick plant.

George Shaw, a contractor, and Mr. Dyer, of Peru, Neb., will build a brick plant at Seneca, Kas.

L. T. Crabtree, of Crandon, Wis., has found a fine deposit of clay on the Peshtigo river that is suitable for pottery or high-grade clay work.

W. T. Puckett has bought from I. N. Brown & A. W. Lilly, of Atlanta, their interest in the Cartersville (Ga.) Brick Co. and the plant will be started at an early date.

At a meeting of the directors of the Karthaus (Pa.) Brick Works it was decided to increase the capacity of the plant by adding four new kilns and a dry press.

C. R. Cox has bought out J. N. McCam's interest in the Walla Walla (Wash.) Brick and Stone Co. and will have charge of the construction department of that concern.

A sewer pipe company with $60,000 capital stock will build a plant at Grand Ledge, Mich. J. W. Fitzgerald, Frank Taber and W. E. Wilson are interested.

For the present the brick and tile business of Mallow & Long, New Jasper, Ohio, will be conducted under the same name by S. P. Mallow and Thomas and William Long, sons of the late Henry Long.

The Portsmouth (Ohio) Brick & Tile Co. will start their new plant the first of December. They will turn out 40,000 brick per day. Capt. James Spencer is in active charge.

The Mahoning Valley Mining & Mfg. Co., West Austintown, Ohio, has been incorporated with $25,000 capital stock to mine paints, limestone, fire clays, sands, etc.; incorporators are John A. Dvorak, John B. Lloyd, G. H. Martin, E. M. Polster and John F. Crowl.

E. Z. Miller and F. E. Wood, of Paradise, Cal., have organized the Paradise Brick Co. and will engage in the business at a small station eight miles from Chico on the Butte county railway. Machinery has been bought for a 35,000 brick daily capacity plant.

It is now understood that the Utica Pressed Brick Co. will soon start on building its plant at Canastota, N. Y., adjoining the Erie canal and the Lehigh Valley railway. The name of the company will probably be changed to the Canastota Pressed Brick Co.

The Lonsdale Fire Brick Co. has been granted a charter with $50,000 capital stock. The incorporators are H. S. Misner, H. S. Misner, Jr., T. C. Lundy, Charles Murphy and D. A. Rosenthal, of Knoxville, Tenn. The plant is at Lonsdale.

The Rossville Brick Co., Rossville, Staten Island, N. Y., have just placed contracts with the Henry Martin Brick Machine Mfg. Co., Lancaster, Pa., for a complete plant of 100,000 daily capacity, to include two of the largest "Martin" Style "A" Steam Power Brick Machines with the "Martin" Automatic Delivery System and two equipments each of 50,000 daily capacity "Martin" Steam Brick Dryers with a battery of three 150 H. P. boilers and a 200 H. P. Corliss engine. The Martin Co. expect to have this new plant in operation by the first of March.

The output of the Terra Haute, Ind., brick yards for the year 1905 will amount to 11,000,000 brick.

The Brazil Clay Co., Brazil, Ind., has increased its capital stock from $50,000 to $150,000.

A. F. Corrington has sold his interest in the Corrington Brick & Tile Co. at Moweaqua, Ill., to C. H. Corrington.

A silica brick works will be built on the Harper estate at Dunbar, Pa., by Philadelphia capitalists.

J. T. Leach, Center Junction, Iowa, is increasing the capacity of his brick and tile plant on account of the demand.

E. J. Gump, Vance, Kas., has sold his brick plant to C. F. Warner for $20,000. Mr. Warner will operate the plant and make some improvements.

The Lincoln Park Coal & Brick Co., Springfield, Ill., has been incorporated with $50,000 capital stock by Harry H. Devereaux, David A. Matson and Harry C. Page.

The Crescent Brick Co.'s plant at Eatontown, N. J., is now turning out 20,000 brick daily. A new dryer and additional kilns will be built at once.

The Illinois Car Co., Urbana, Ohio, will dispose of its brick making branch of the business as the building and repairing of cars takes all its time.

Richard Hibbard, Kearney, Neb., will not sell his brick works to the western brick trust, but instead will make many valuable improvements.

It is announced that George G. Bayne, formerly of Joplin and Mason, Mo., is at the head of a company to erect a $200,000 brick plant for Tulsa.

The new brick manufacturing plant of Williams, McIntire & Co., at Marysville, Ohio, is being rapidly pushed to completion. More land has been bought and additional kilns are being planned.

O. A. Kentner, of Coffeyville, and W. S. Cochran, of Chanute, have contracted to build a 100,000 brick daily capacity plant at Mound City, Kas., and another company is negotiating for 60 acres of shale to build another plant to use the immense flow of gas.

The Wayne Brick Co., McVeytown, Pa., has been incorporated with $50,000 capital stock. The directors are W. M. Atkinson, Matawanna, D. C.; Nipple, Newton-Hamilton, and W. P. Stevenson, William Ewing and W. M. Witherow, of McVeytown.

The Miller Brick & Tile Co., Cloverport, Ky., has been incorporated with $40,000 capital stock. The officers are D. S. Miller, president; Hywel Davis, vice-president; H. S. Miller, secretary and treasurer, and D. S. Miller, Jr., manager. The company has purchased the Patton Brick Works and will reconstruct and put it into operation.

The Southern Brick Co. has been organized at Little Rock, Ark., with $100,000 capital stock. The president is G. M. Hampton, of Fordyce; vice-president and secretary, R. C. Butler, of Little Rock; treasurer, Charles McKee, of Little Rock; foreman, Lee Jarrett. The plant located at Kingsland, Cleveland county, will be moved to a location four miles southwest of the city.

Clay and Clay Property for Sale

550 Acres of Land in Cherokee County, Kansas, with ovens for making coke, natural gas for burning brick, etc. Mo. Pac. and Mo. K. & T. railroads' tracks on the property.

For full particulars address

BORDEN & LOVELL,

17 Battery Place, NEW YORK CITY

WANTED

A man to take charge and manage a brick and tile plant. He must thoroughly understand machinery, setting brick and drain tile and burning same. The plant is engaged in manufacturing stiff mud brick, dry pressed brick and drain tile. A permanent position to the right man. State age, experience, salary expected and full particulars. Prompt action required. Address,

FACTORY,
Care, Clay Record.

BRICK YARD FOR SALE.

Brick Yard for sale cheap. A bargain to the right party. Good market at hand. For further information address

BRICKMAKER,
Care Clay Record, Chicago, Ill.

FOR SALE CHEAP.

Freese Combination Brick Machine, 30,000 brick capacity, side-cut board delivery table, 60 horse-power Tubular Boiler, 50 horse-power Engine, 11,000 three-slat 10x36 pine Pllets, Trucks and Barrows. All in good condition. Will sell separate or whole. Address JOHN POEHLEIN,

1600½ 18th St., Louisville, Ky.

FOR SALE.

Profitable running brick plant, 25,000 capacity. Ready sale for entire product. Owner has larger interests requiring attention.

TERRA HAUTE PRESSED BRICK CO.
Terra Haute, Ind.

WANTED.

Position as superintendent or manager paving brick plant. Have had years of successful experience as manager of brick plants. Have built and successfully operated plants in all parts of the United States. Location of present position not desirable. Can arrange to leave at any time. A1 reference. Plant needing an active up-to-date hustler where results count desired. Address

BUSINESS, care Clay Record.

WANTED.

Wanted—A Four-Mold Dry Press, in good condition. Price must be reasonable. Address

T, care Clay Record,
Chicago, Ill.

FOR SALE.

For sale, reasonable, in condition—
One 5x18 foot Horizontal Tubular Boiler.
One No. 20A Penfield Hollow Brick Machine.
One 14 foot Pug Mill.
One Disintegrator,
One 40 foot Clay Conveyor, with 20 foot belt.
Forty Fire-proofing Dies, with two extensions, pullys, clutches and belting.
Reasons for sale, are making different ware.

R. 611, W. 51st St.,
New York City.

BRICK PLANT FOR SALE

For Sale—$20,000 00 will purchase an active interest in a well established and profitable Fire Brick and Paving Brick manufactory located in the Flint Clay District of Kentucky. Good position open to purchaser. Splendid opportunity for a good man. Address, E, care of Clay Recrod, Chicago, Ill.

FOR SALE CHEAP.

One Lehman Slumming Machine, One Garden City Double Fan, in use only 60 days. Write for prices etc. to J. R. VAN BUREN & CO.
Griswoldville, Ga.

Machinery For Sale.

FOR SALE

Two Wiles Soft Mud Steam Power Brick Machines. Two Tempering Wheels for horses. 40 h.p. Boiler. 30 h.p. Engine. 5 or 6 Trucks. All necessary Belt and Shafting. Also about 500 feet light Steel Rails with Switches. Everything in good working order. Will sell cheap as we have started an in-door yard.

E. T. & IRVING HAND,
Plainfield, N.J.

FOR SALE

One Komnick 1000 to 1200 per hour sand-lime Brick Press in good condition. Was replaced with larger capacity press, same make. Inquire of the

SAGINAW SANDSTONE BRICK CO.
Saginaw, Mich.

FOR SALE.

50 rack cars for 32 inch pallets, capacity 432 brick; track gauge 24 inches.
Also 55 flat cars for soft mud brick, with foot pallets Track gauge 25 inches.
Both styles of cars in first-class repair.

ATLAS CAR & MFG. CO.
Cleveland, Ohio

GIANT MACHINE FOR SALE.

A second-hand No. 2 Giant Auger Brick Machine. Address "GIANT,"

Care Clay Record, Chicago.

FOR SALE.

Right and left-hand One, Two and Three Way Switches, of various gauges, radius and weight rail, at special prices.

THE ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

FOR SALE—CHEAP—1200 Steel Crimped Pallets. 10x34 inches. Address

ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

FOR SALE—CHEAP—New and re-laying rails, 12, 16, 20 and 25 pound. For prices, address

ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

FOR SALE.

One 4-Mold Dry Press, very cheap. Good as new.

DEALER,
Care Clay Record, Chicago, Ill.

FOR SALE.

100 Single Deck Cars.
3 Transfer Cars.
1 Centrifugal Pump.

O. W. DUNLAP,
Bloomington, Ill.

FOR SALE—BRICK PLANT AT BIG RAPIDS

A good investment for a young man with small means. The Plant could be paid for out of the profits of business in short time. Yard in good condition, modern machinery, plenty of clay; will make red and white brick. 40 acres of land, large barn, brick dwelling. For further particulars, address

W. H. VANDER HEYDEN,
Ionia, Mich.

FOR SALE.

Only wire cut shale brick plant in Sharon, Pa. Capacity 25,000 brick daily. Reason for selling, owner busy engaged elsewhere. Town 30,000 inhabitants. Uses more brick than can be made. Address

J. V. ROSE
604 Merchants Exchange Bldg., San Francisco, Cal.

WANTED

A good reliable man of experience with small capital to invest, to take charge of a new modern Steam Brick Plant, organized for brick and tile. Plenty of good clay and good prices for brick. Address, WISCONSIN,

Care, Clay Record, Chicago, Ill.

Do Your Brick Turn White?

HERE IS THE REMEDY.

PRECIPITATED

Carbonate (K.B. C.F.H) **of Barytes**

The only preventative for scum and discoloration on facing Brick and Terra Cotta; neutralizing the Sulphate of Lime in the Clay and Water.

Circulars and Particulars on Application.

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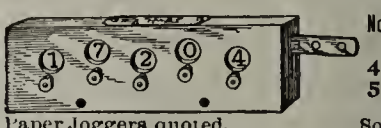

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4 Wheel, $3.00
5 Wheel, $3.25
Guaranteed.
Sold by all dealers.

Paper Joggers quoted.
R. A. HART, 41 White St., BATTLE CREEK, MICH.

FOR SALE.

One 12-foot Pug Mill. One American Clay Machinery Co.'s Brick Machine. Raymond Repress. Iron Brick Cars. Pallets, Etc.

BOX 1048, Worcester, Mass.

FOR SALE.

Brick plant in Mississippi town of 5000 population. Plenty of good clay and big demand for brick. Reason for selling owner can't give personal attention. Address

"MISS," care Clay Record,
Chicago, Ill.

WANTED.

FOREMAN for our sand-lime brick factory. Only experienced men need apply.

ST. PAUL BRICK CO.
St. Paul, Minn.

FOR SALE OR RENT.

Best situated sand-lime brick plant in the State, in good repair, fine product, good demand, an excellent opening for an experienced man. Address

J. E. BARTLETT.
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FOR SALE.

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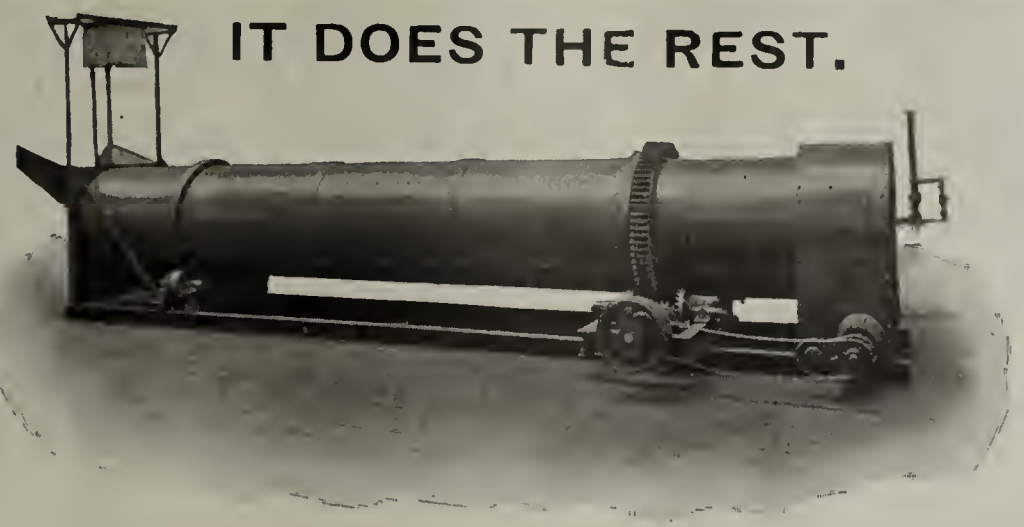

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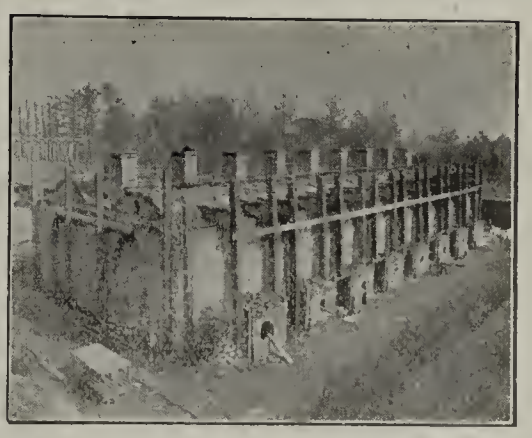

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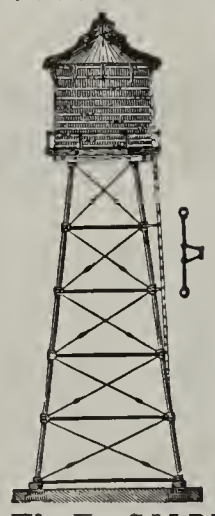

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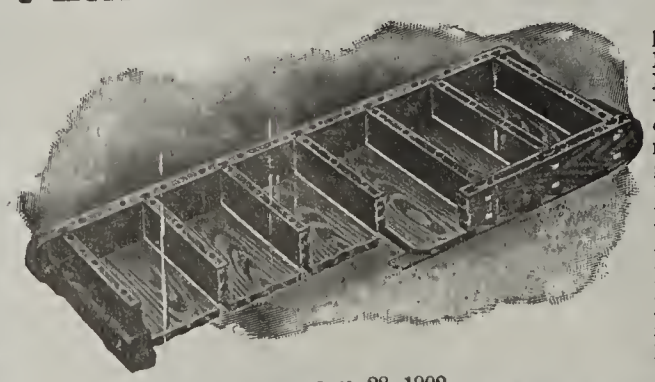

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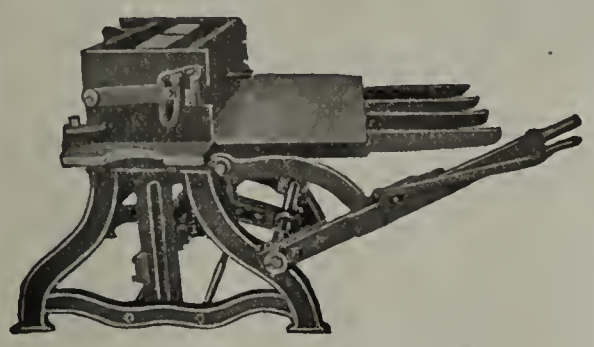

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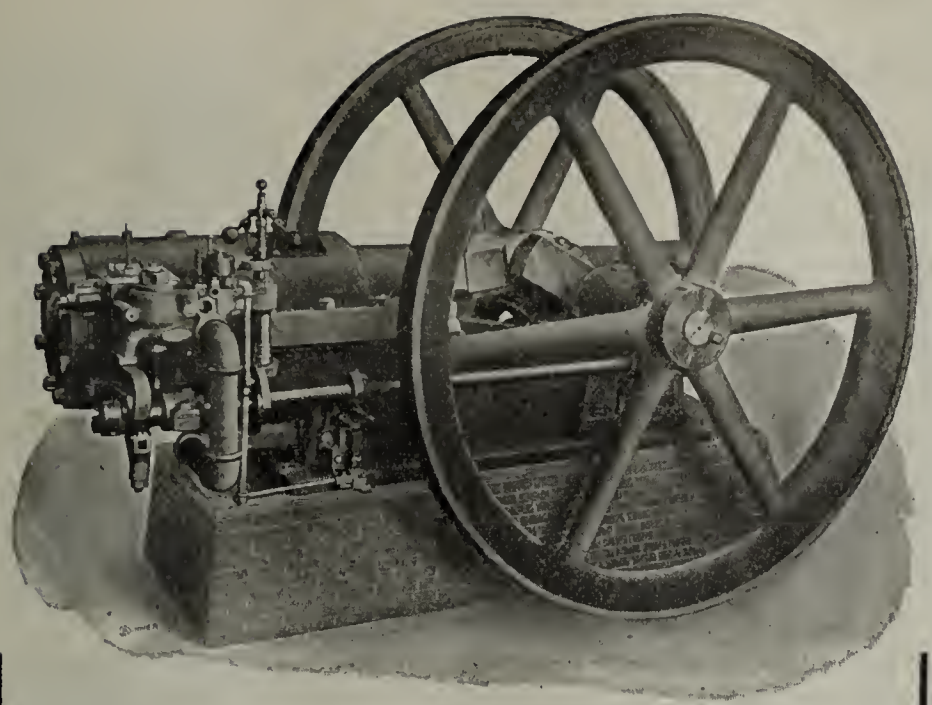

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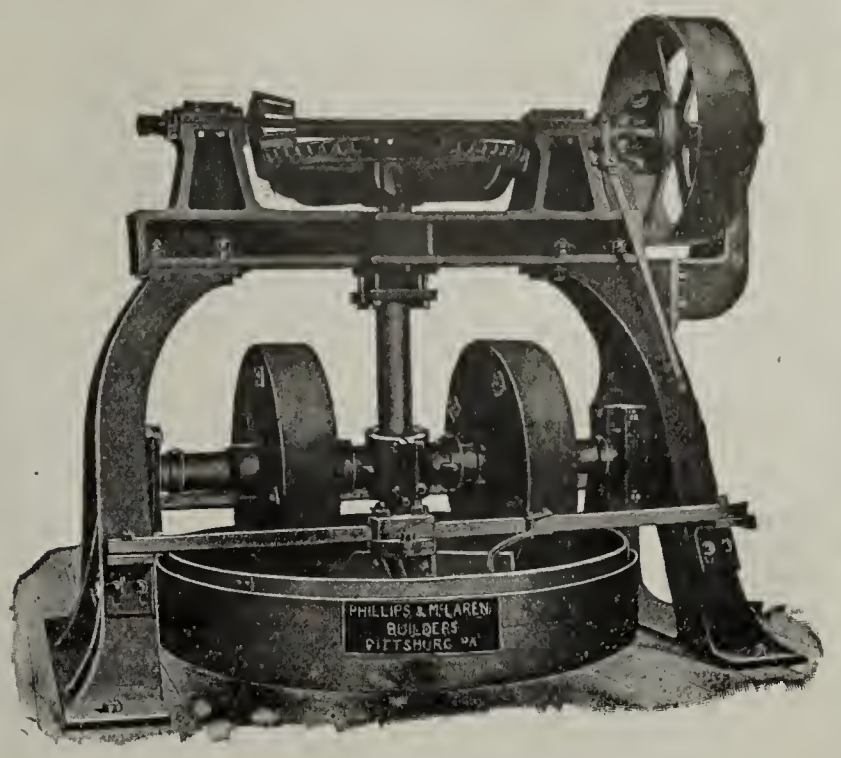

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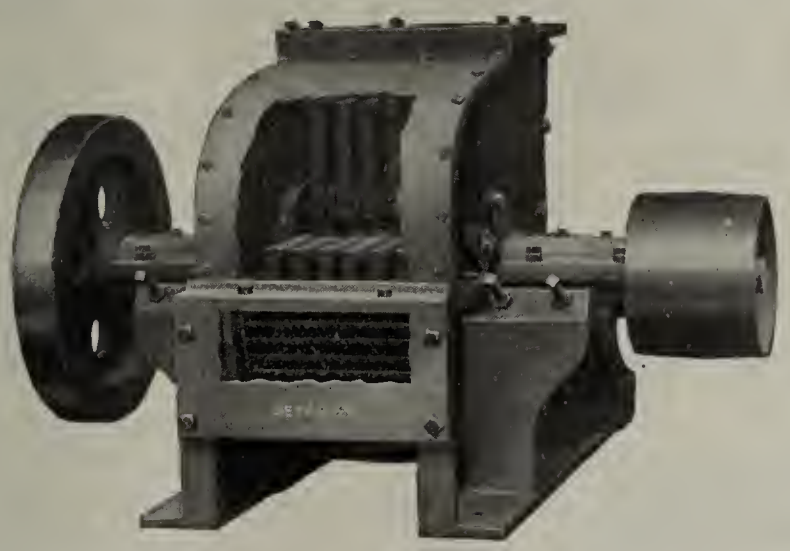

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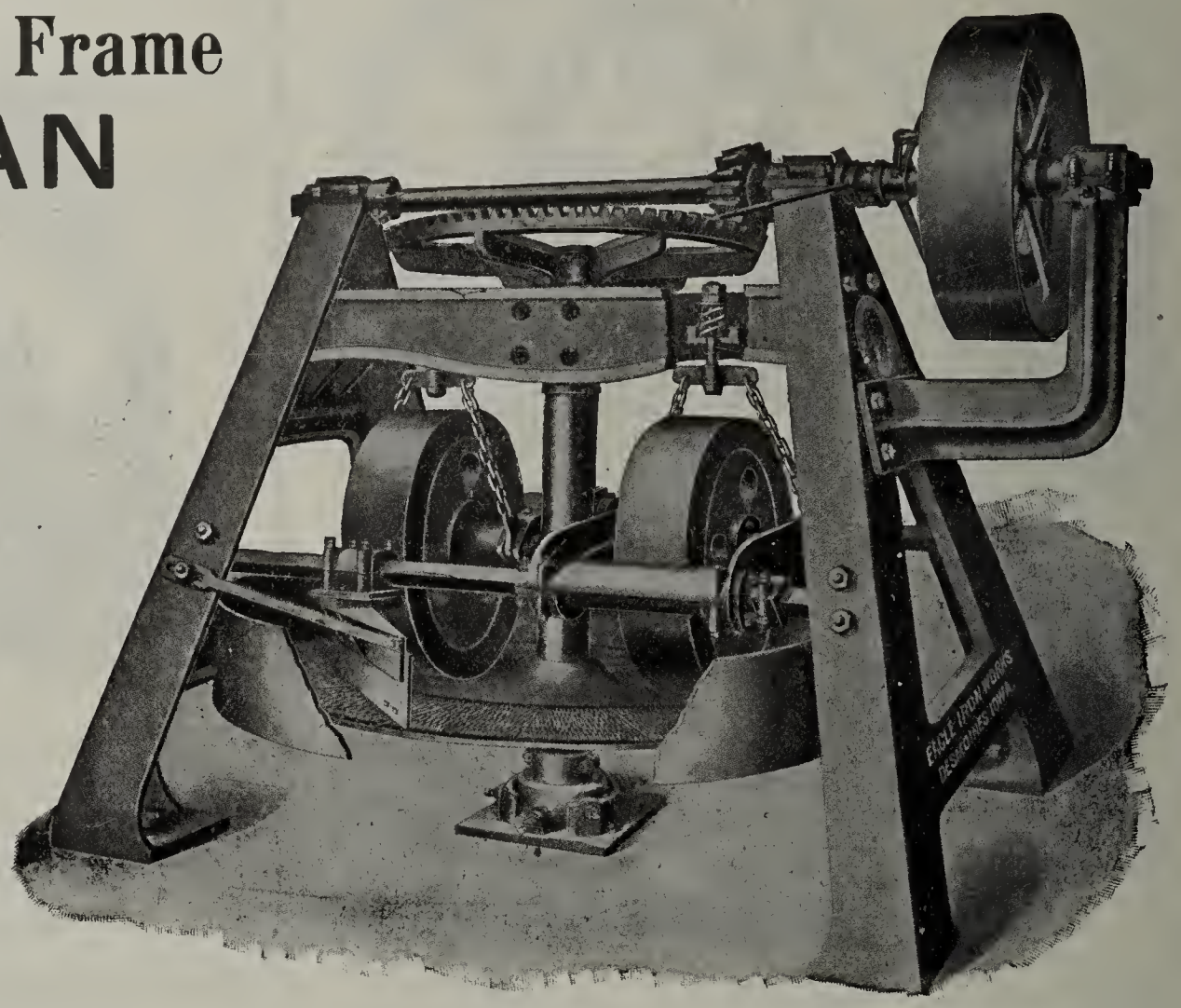

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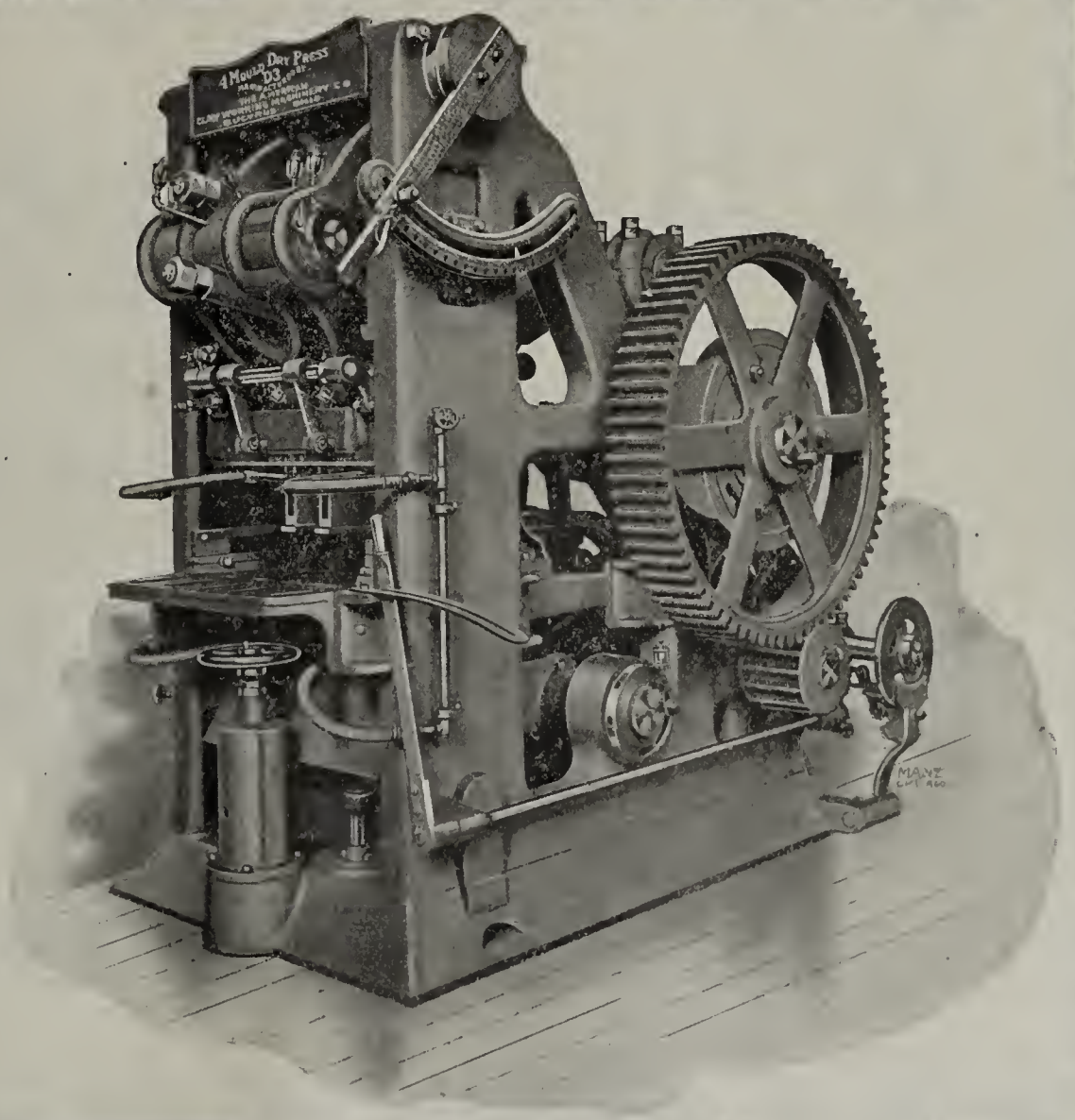

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25 Factories Designed, Equipped and Set in Operation During the Past Year in the United States and Canada.

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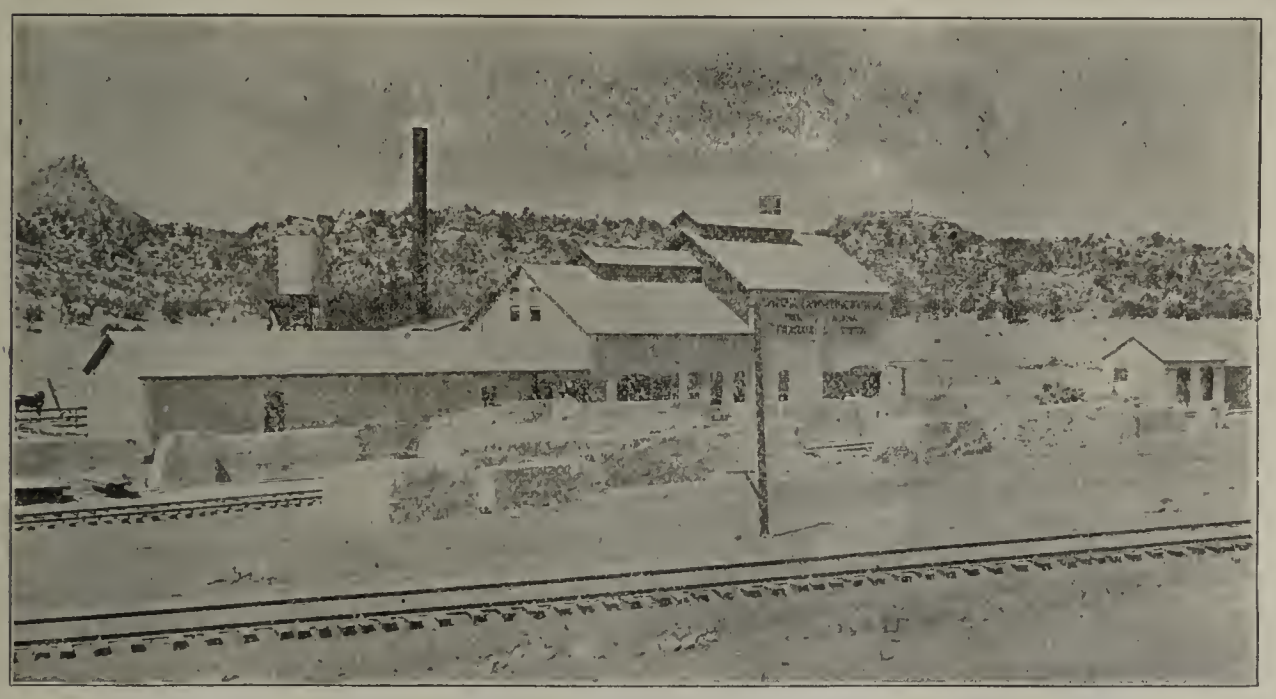

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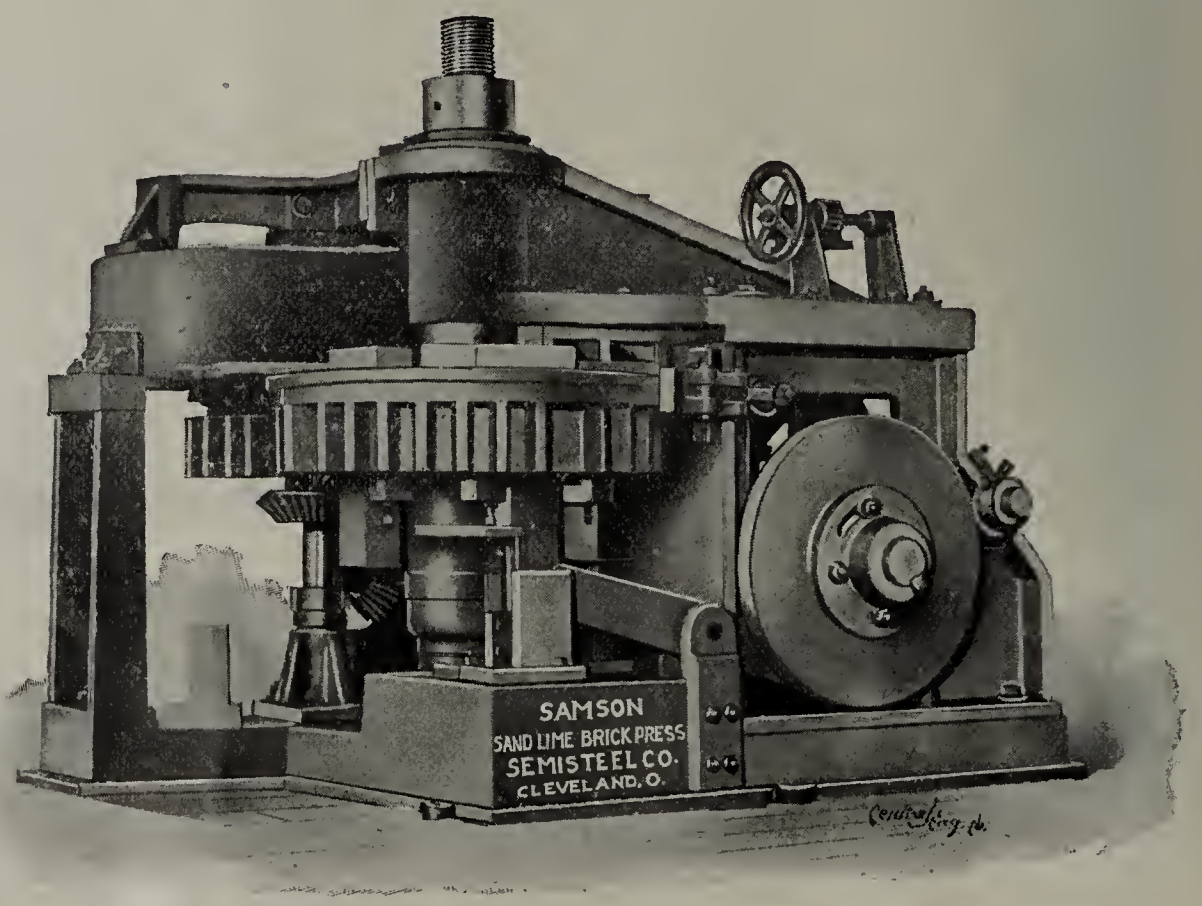

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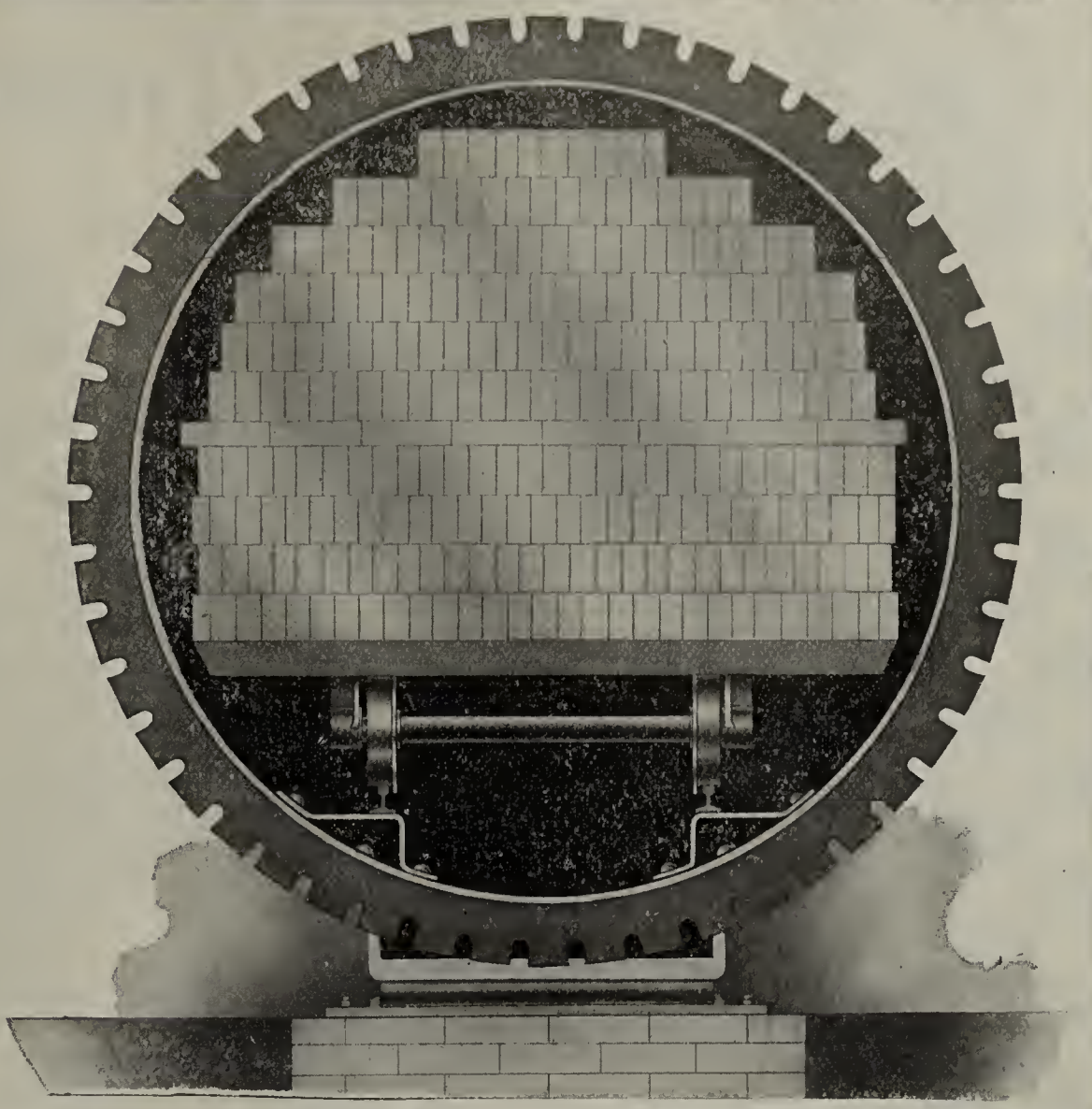

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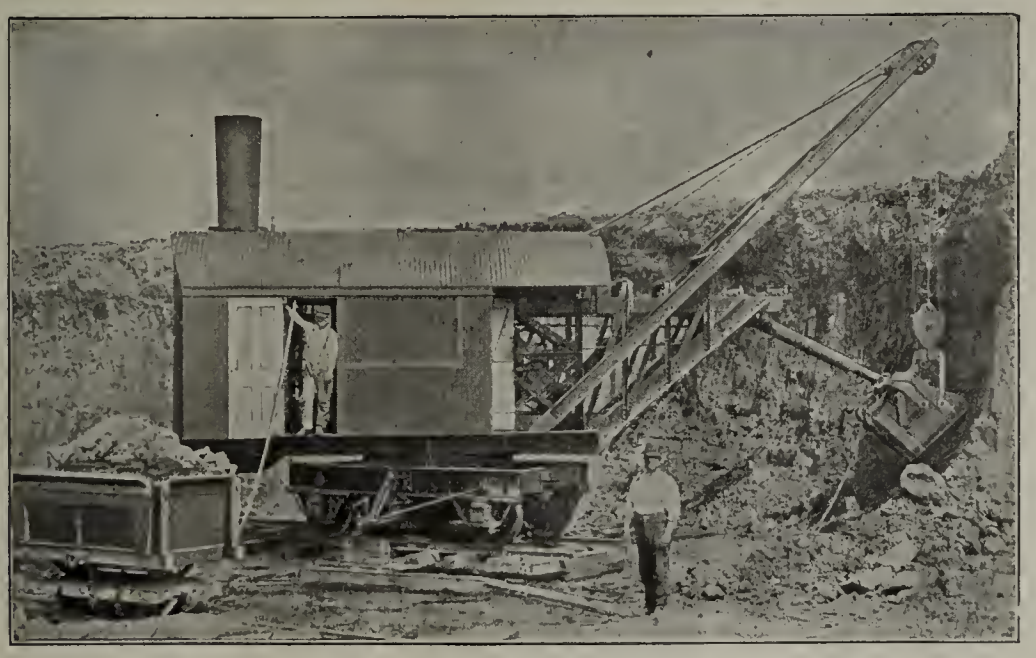

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Especially adapted for brickyard requirements. The shovel operates in a complete circle, enabling material to be delivered at side or in rear at will. The Dipper is hung from a horizontally moving carriage and can be adjusted to cut to any desired level.

: : Only One Operator Required.
Wire Cables used instead of Chains.
Strictly First-Class in Every Detail.

Economical for brickyards 30,000 to 40,000 daily capacity.

Operated by one man for outputs up to 125,000 brick per day.

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:: THE :: "SCIENTIFIC SYSTEM"

What it Stands For

UNTIL the advent of the **"SCIENTIFIC SYSTEM"** there was no process for making **SAND LIME BRICK** which *automatically* insured the proper mixing of the materials. The correct preparation and mixing of the materials is the most important step in the making of good **SAND LIME BRICK**, since upon the *preparation* and *mixing* alone depends the excellence of the finished product.

The **"SCIENTIFIC SYSTEM"** insures *absolute uniformity* in these most important operations, our Preparing Machine **RELIANCE** being so near automatic that it can be managed by *one common laborer.*

We want you to know about this system, and therefore invite the strictest investigation, being convinced that you will not fail to see the many advantages which our **"SCIENTIFIC SYSTEM"** presents over all others for the manufacture of **SAND LIME BRICK.**

Why not send for our booklet? It explains our system in detail. It contains information regarding the manufacture of **SAND LIME BRICK** that you *ought to have.* We are engineers whose entire time and thoughts are devoted to the designing and construction of **SAND LIME BRICK PLANTS.** We have made a specialty of this industry and we *know* that we can convince you that our methods are *Right.*

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You Make the brick

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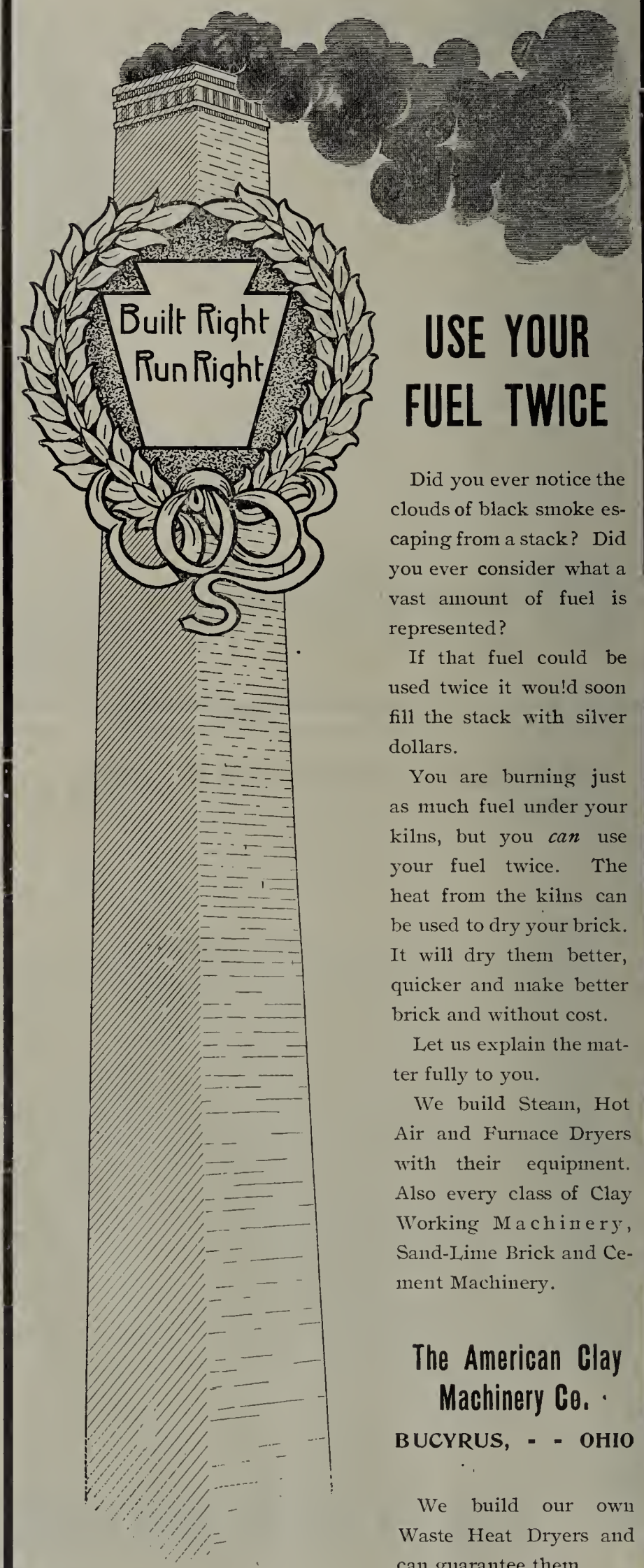

USE YOUR FUEL TWICE

Did you ever notice the clouds of black smoke escaping from a stack? Did you ever consider what a vast amount of fuel is represented?

If that fuel could be used twice it would soon fill the stack with silver dollars.

You are burning just as much fuel under your kilns, but you *can* use your fuel twice. The heat from the kilns can be used to dry your brick. It will dry them better, quicker and make better brick and without cost.

Let us explain the matter fully to you.

We build Steam, Hot Air and Furnace Dryers with their equipment. Also every class of Clay Working Machinery, Sand-Lime Brick and Cement Machinery.

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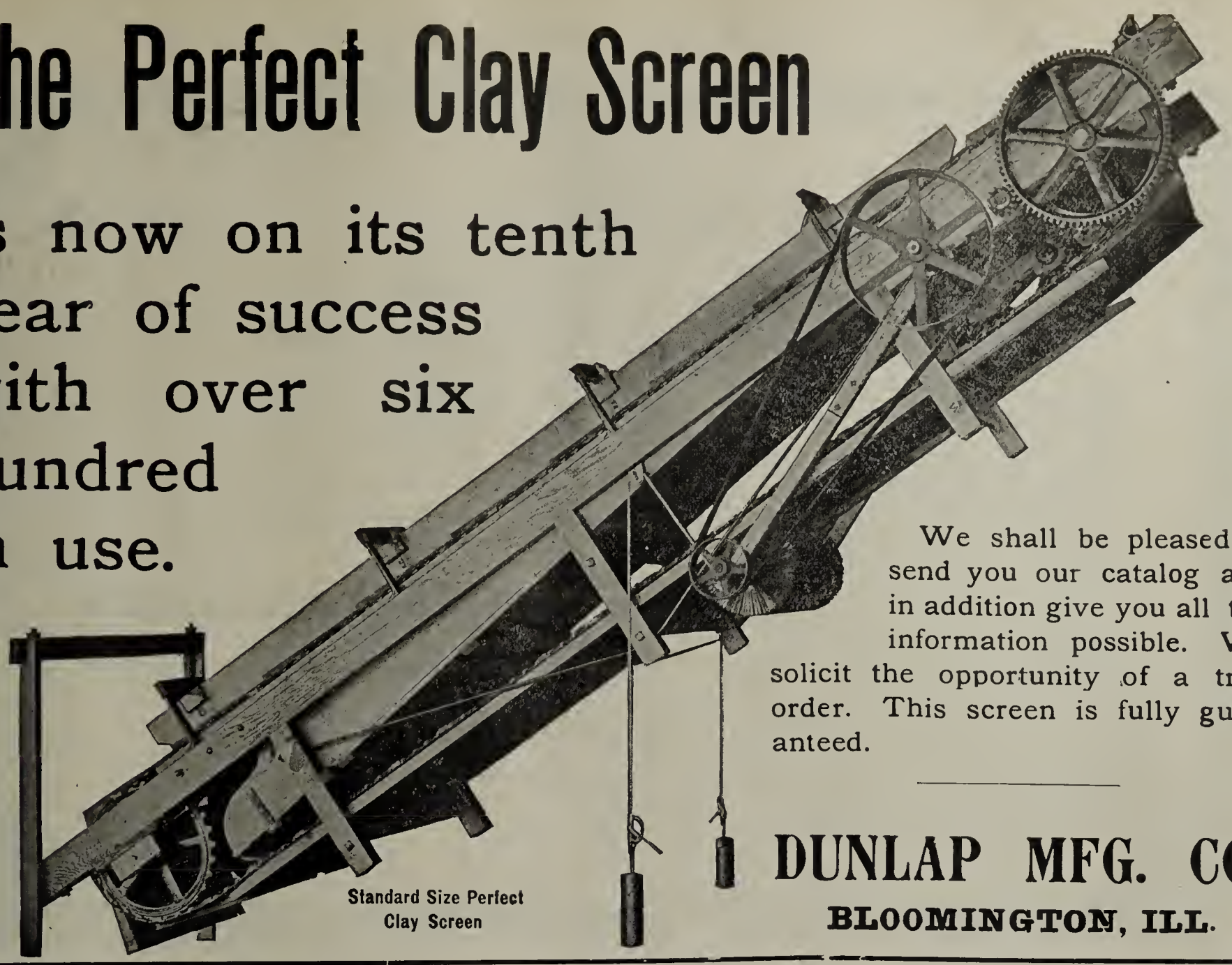
Is now on its tenth year of success with over six hundred in use.



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THE NEW YORK BLOWER CO.'S... WASTE HEAT DRYER

Has saved more money to brickmakers than any other apparatus.

It is an investment that pays for itself in a short time.

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We will investigate any Waste Heat Dryer proposition and make plans and estimates free of charge.

We rebuild any old Dryer into a Waste Heat Dryer at the least possible cost.

We can show a clean record and a long record of Waste Heat Dryers all over the country.

Our Waste Heat Dryers shorten time of burning, save coal, increase capacity, help the color of brick.

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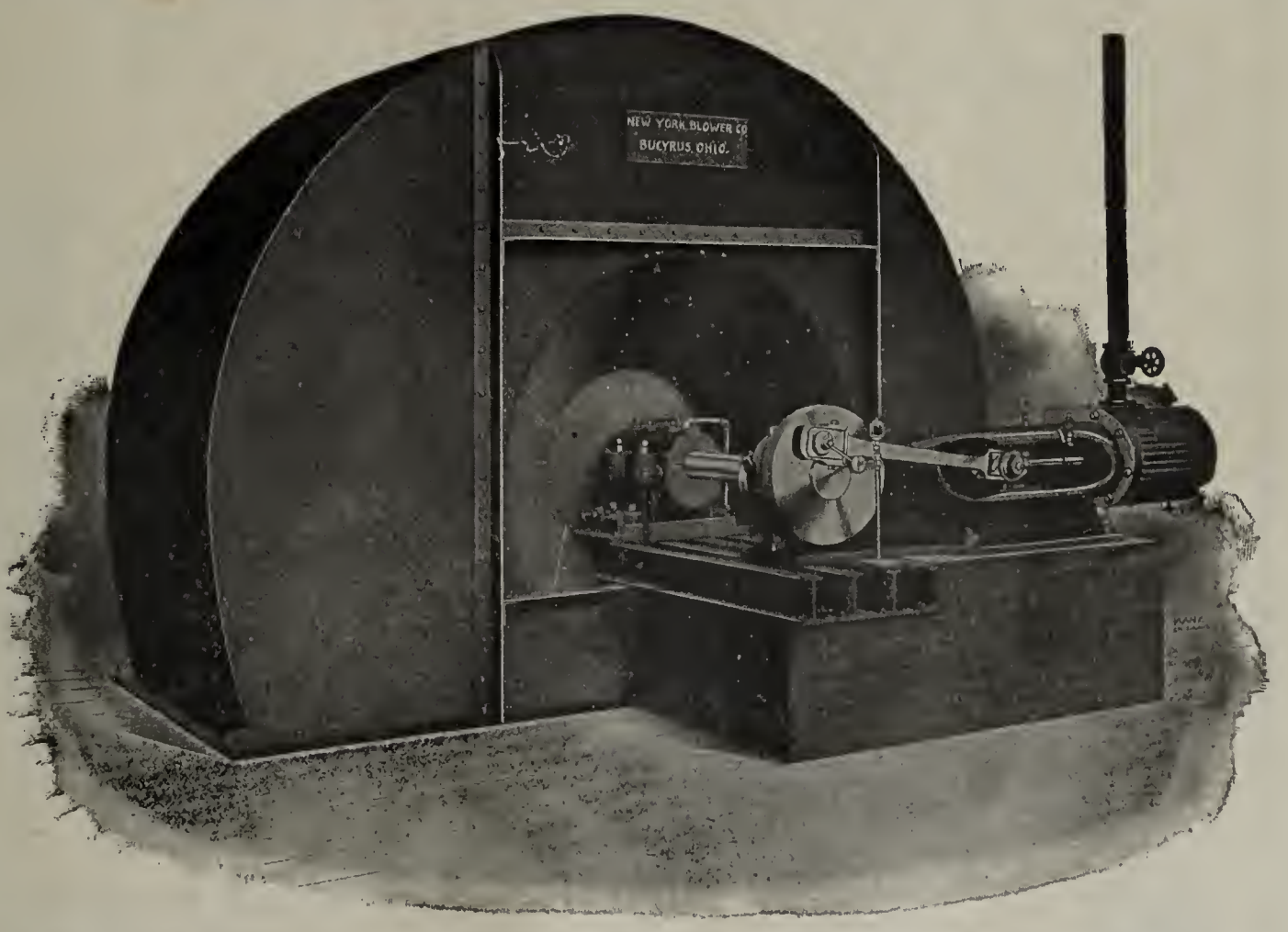

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With it dry your brick and your yearly income will be greatly increased without inconvenience.

Save Conveniently

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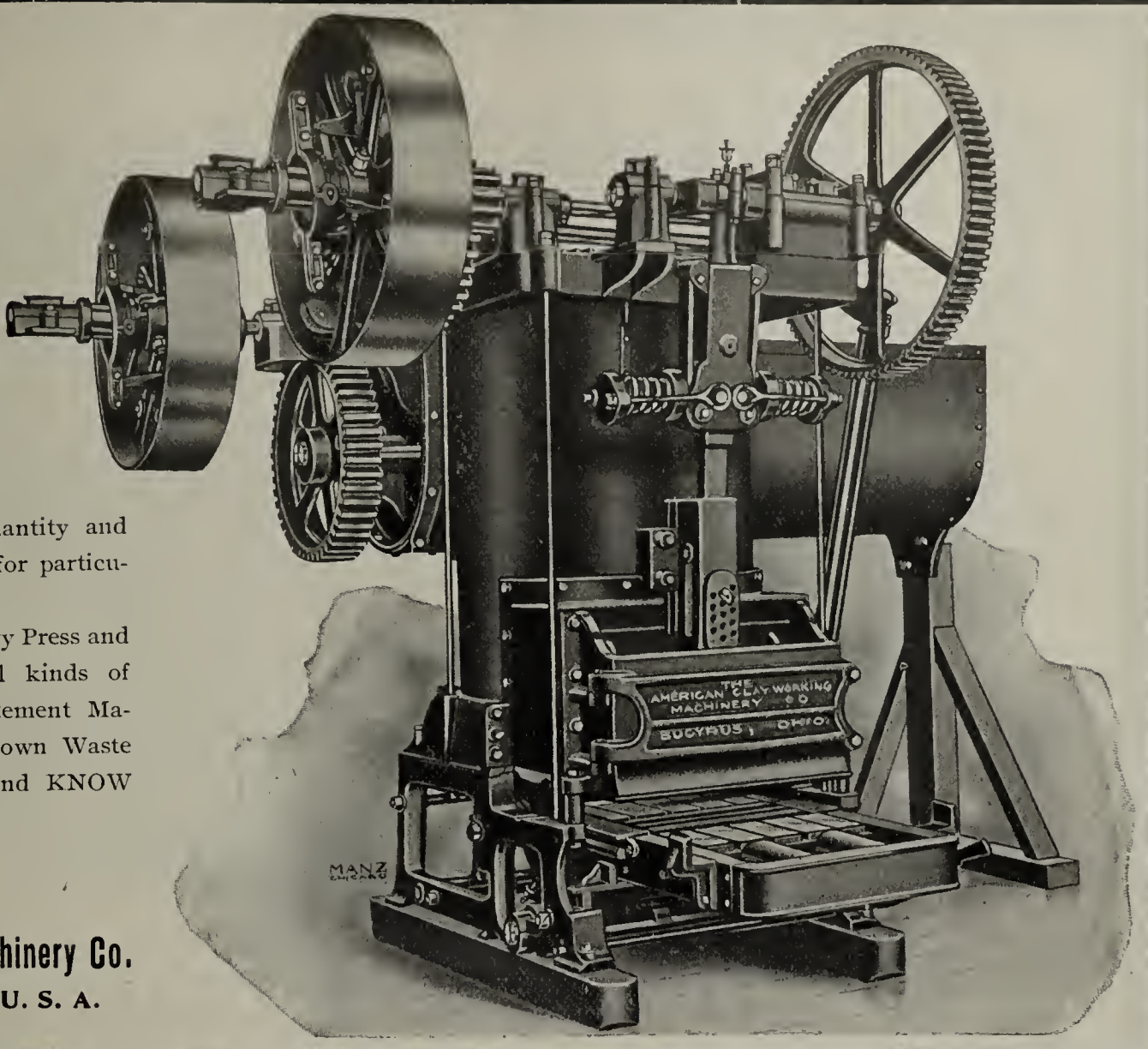

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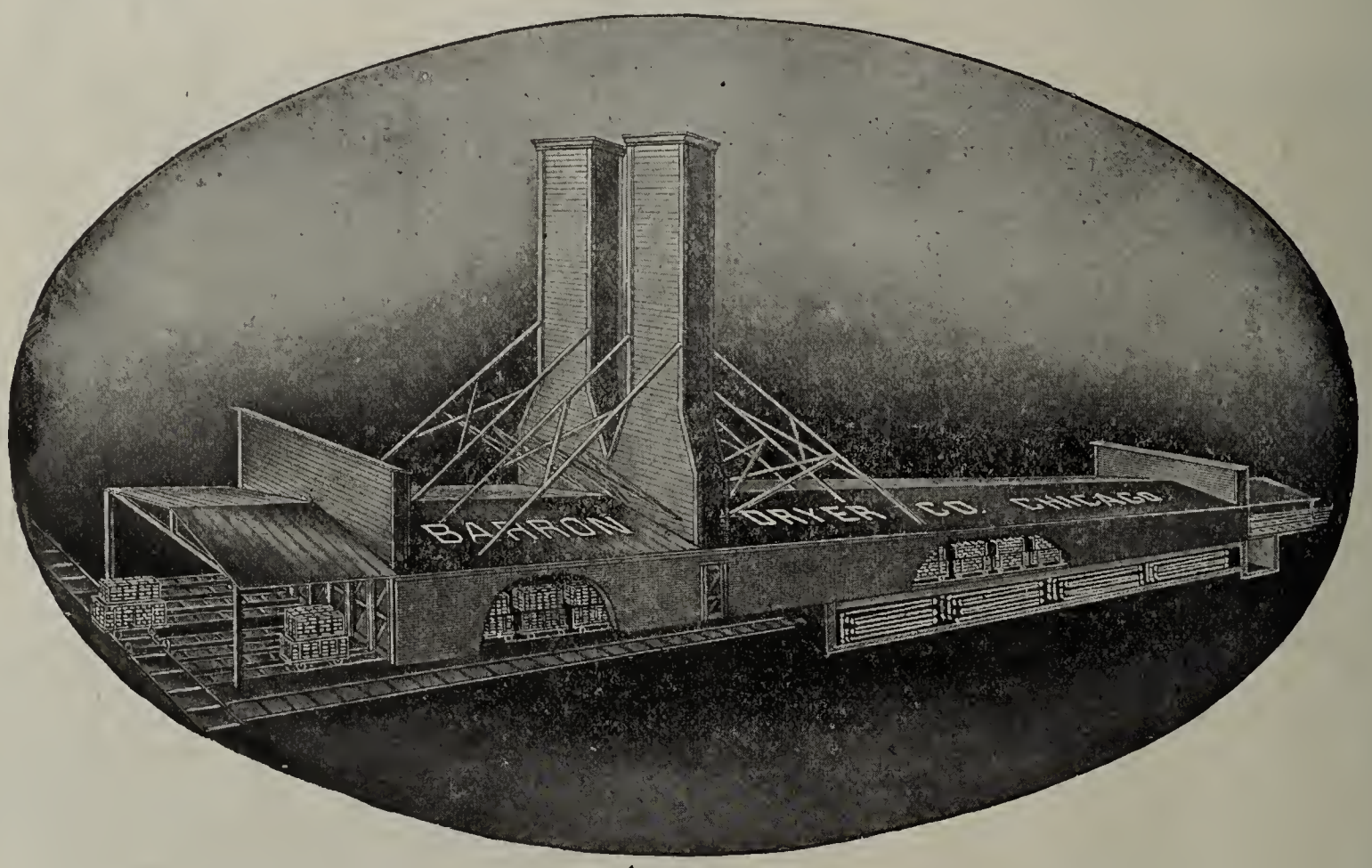

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You know that the brickmakers who are making the money in these days are those who have installed an up-to-date drying system enabling them to cope with ease with the heaviest demands of the market, their operations being uninterrupted all the year round.

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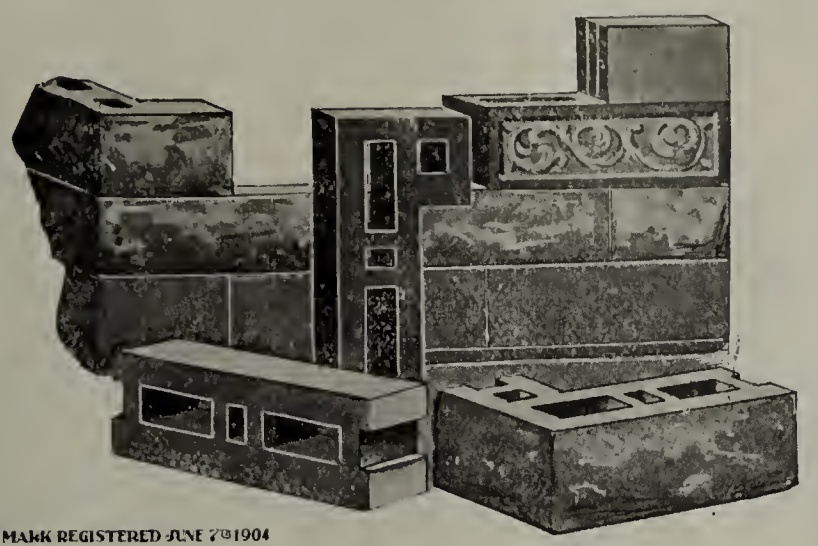

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IT IS THE BEST BY EVERY TEST

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BECAUSE:

It makes all lengths from **four** to **thirty-two** inches.

It makes all widths from **four** to **eighteen** inches.

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It makes all angles for **bay-windows.**

It makes blocks of different contour by removable face plates with patented designs.

It makes **joist** blocks and **nelting-courses.**

It was invented by a **practical** builder who knew what was necessary.

Its proportion as to strength and weight are correct.

It is not a cumbersome and bungling piece of mechanism.

Every block necessary to complete system of construction made by Palmer's machine. No waste.

Don't be deceived into buying a machine just because it makes a hole in a block. This is like poison to our business.

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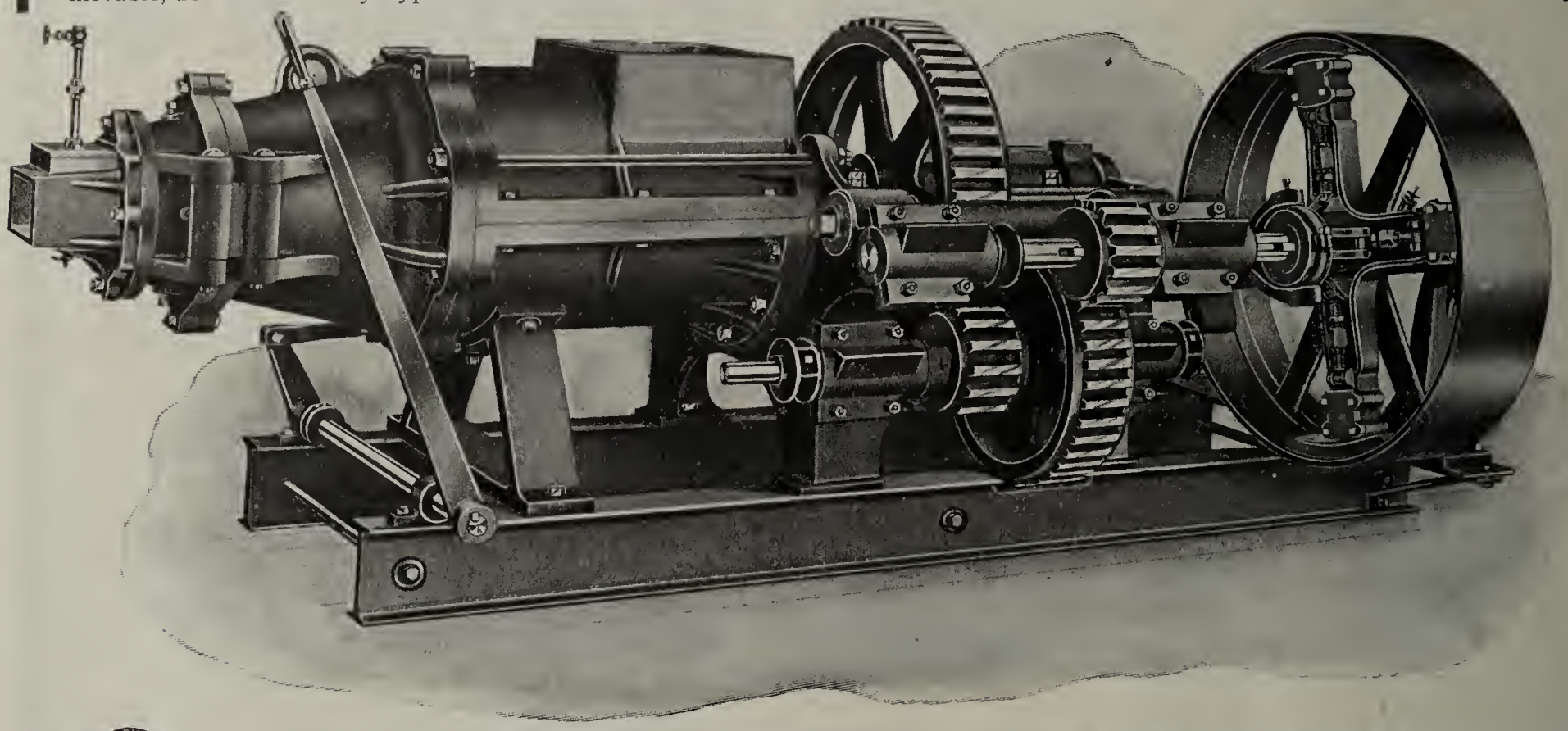

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We build other machines, larger and smaller capacity, same quality. We build everything needed to make clay products. Also Dryers that we can guarantee. Write for catalog.

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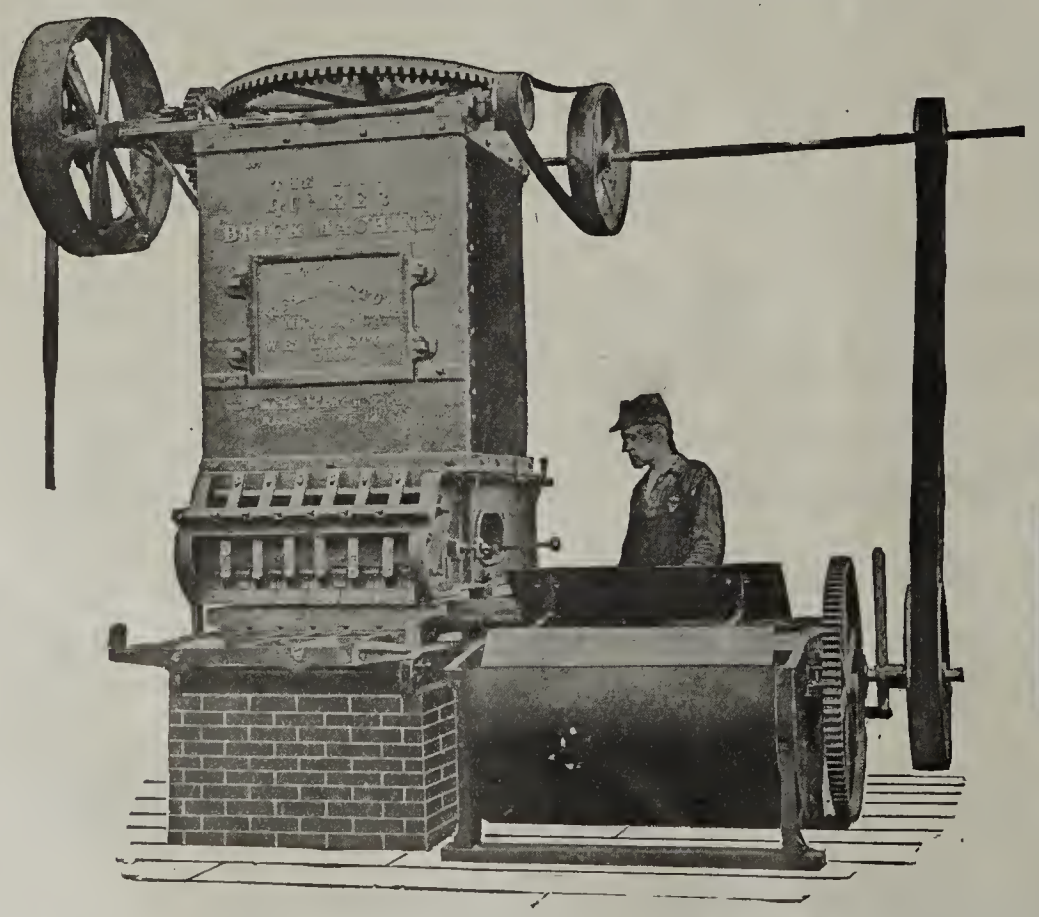

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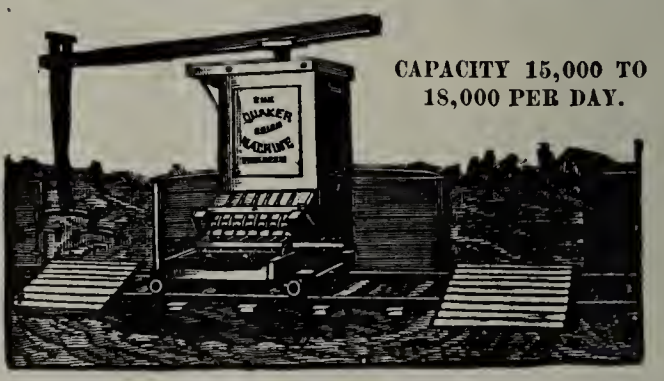

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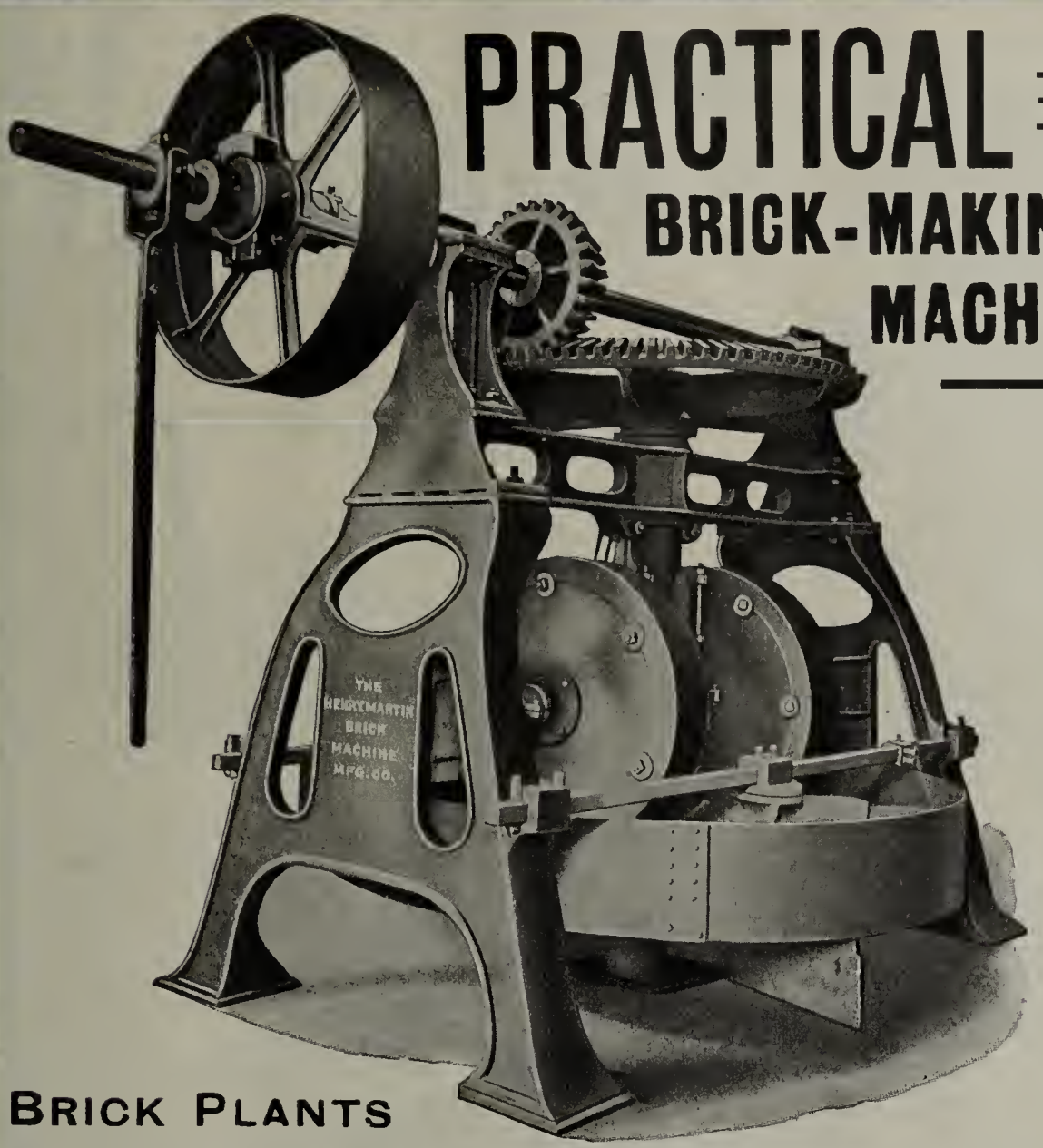

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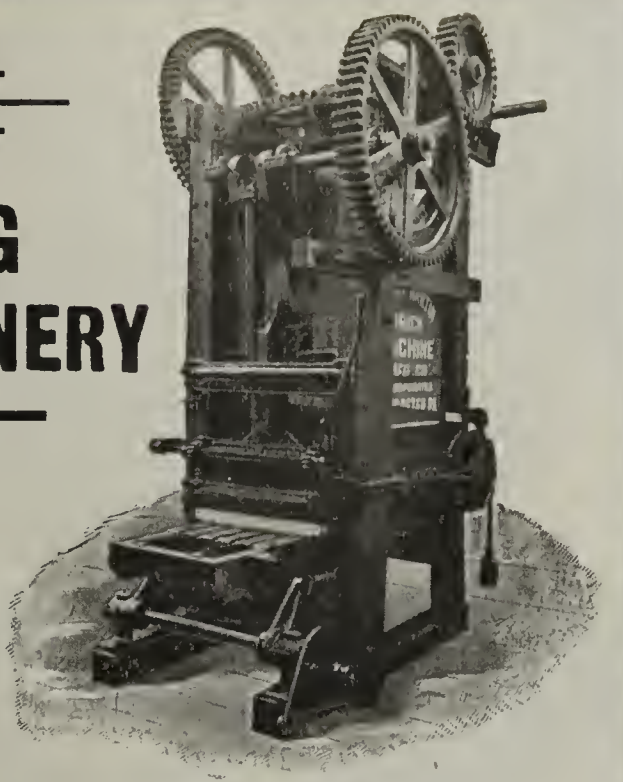

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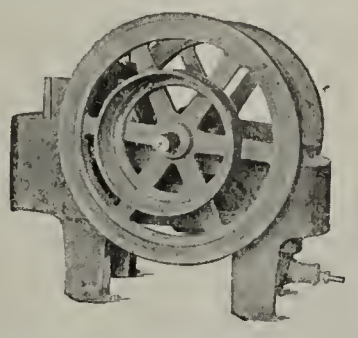
The Favorite Stock Brick Machine



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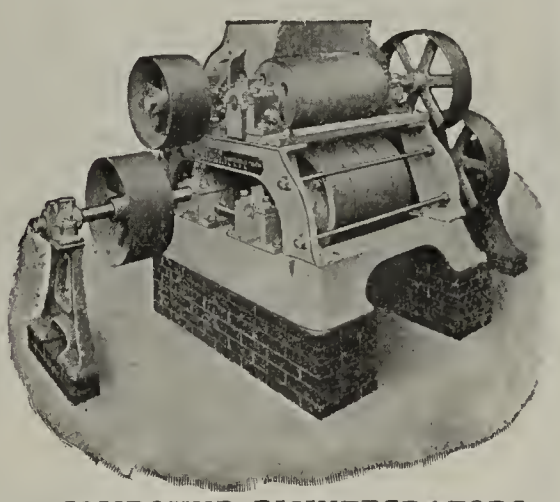

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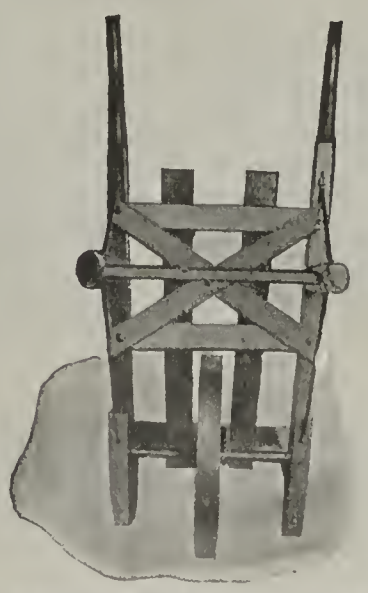

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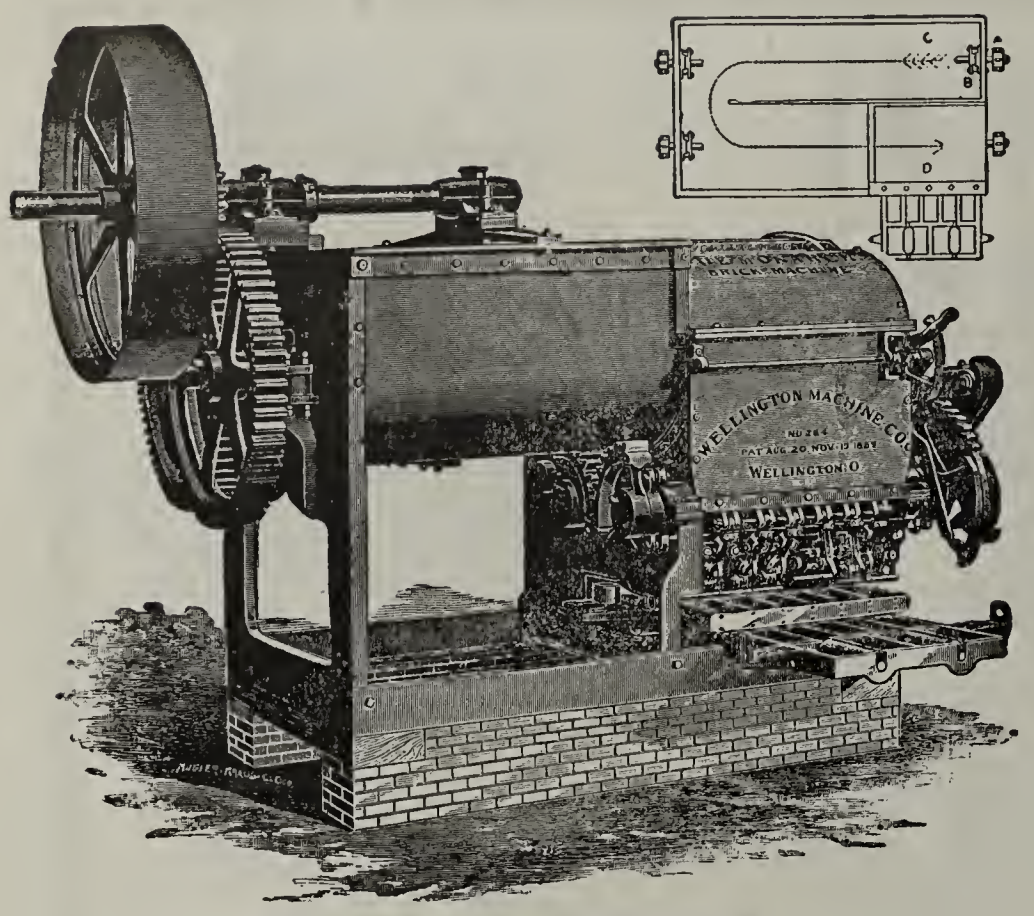

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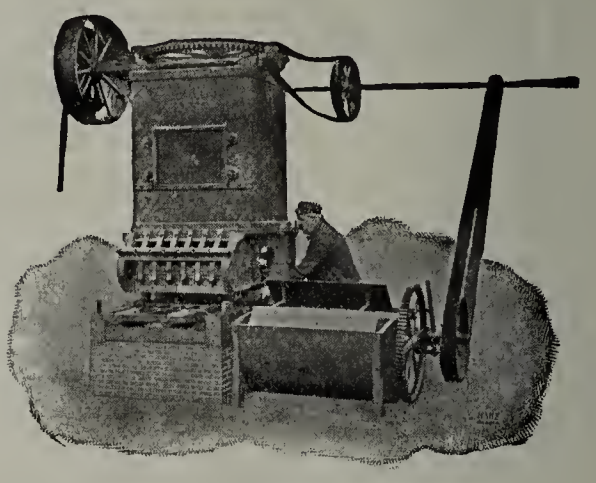

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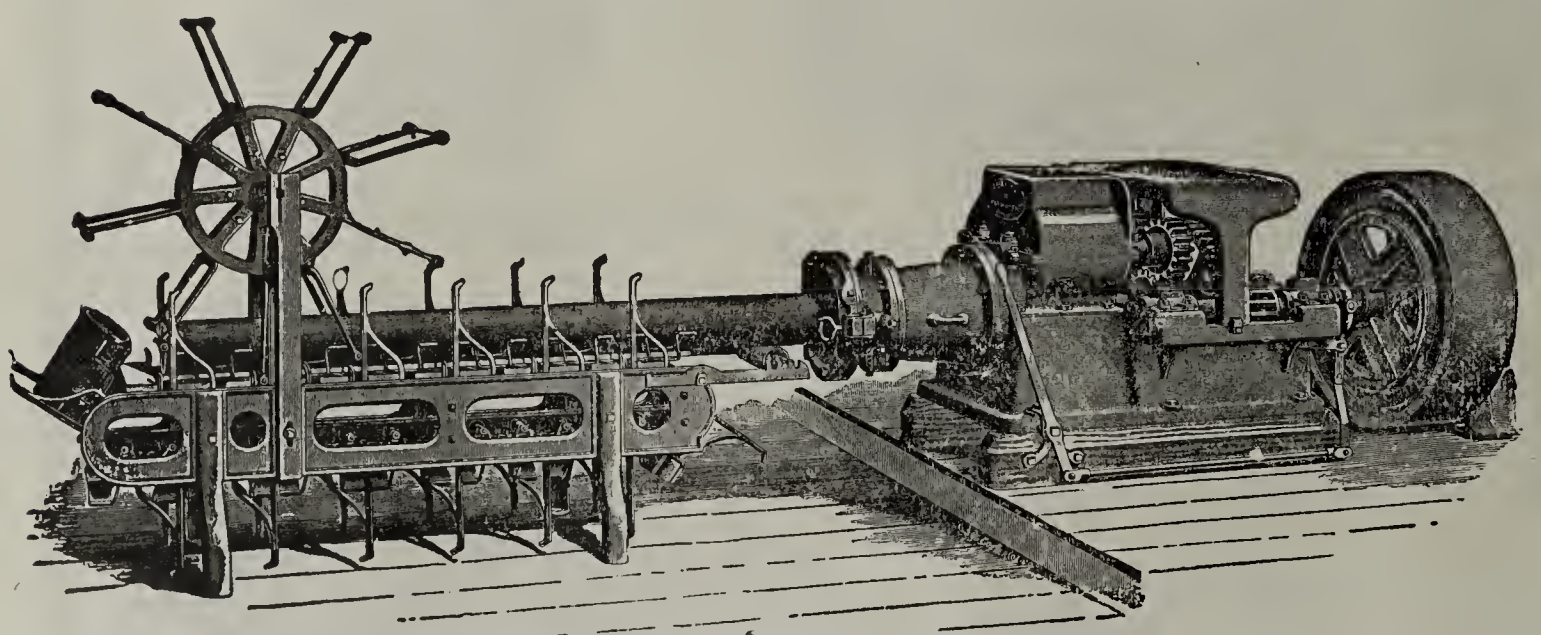

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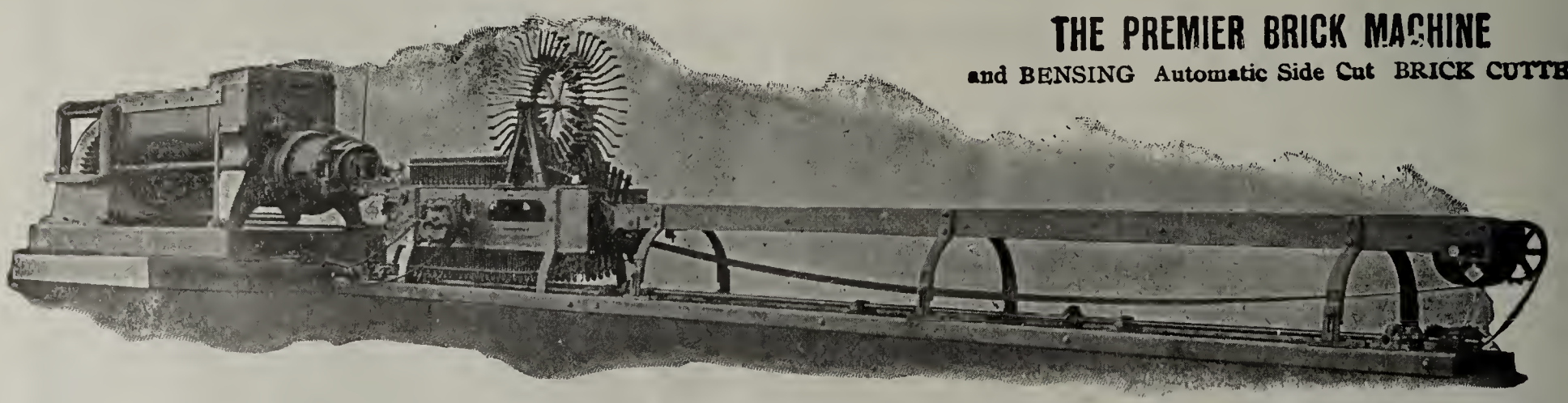

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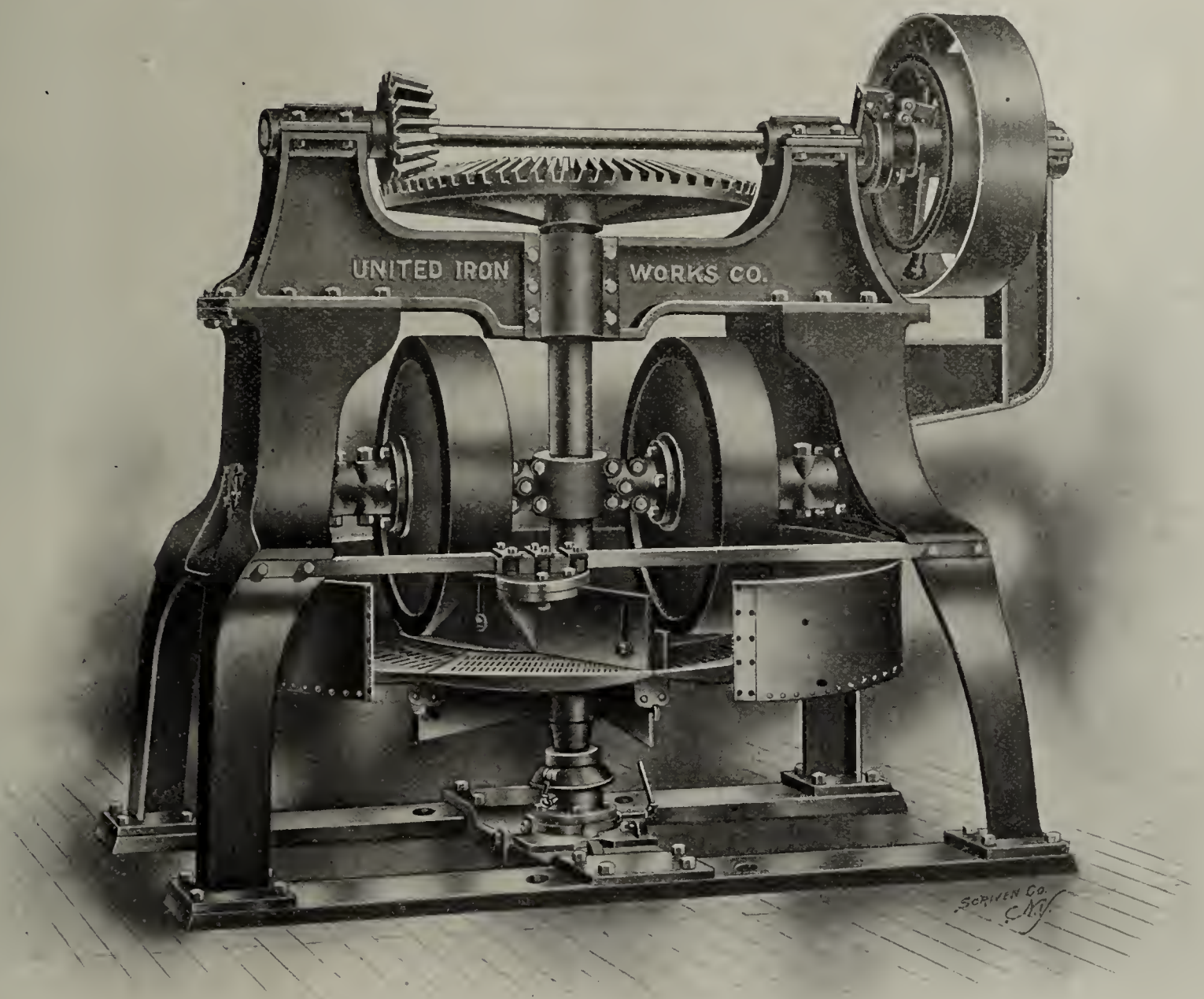

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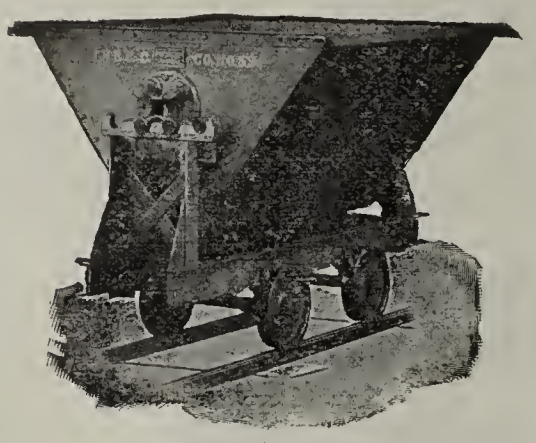

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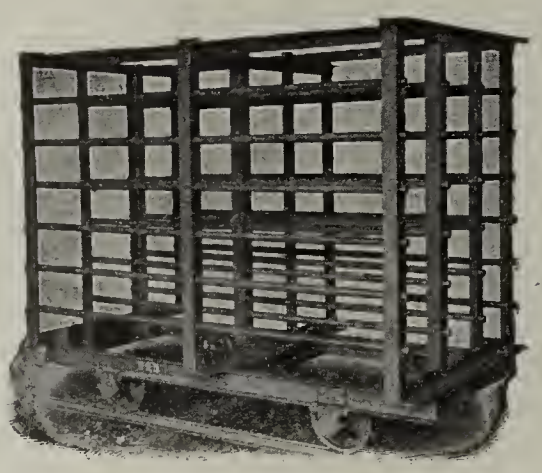

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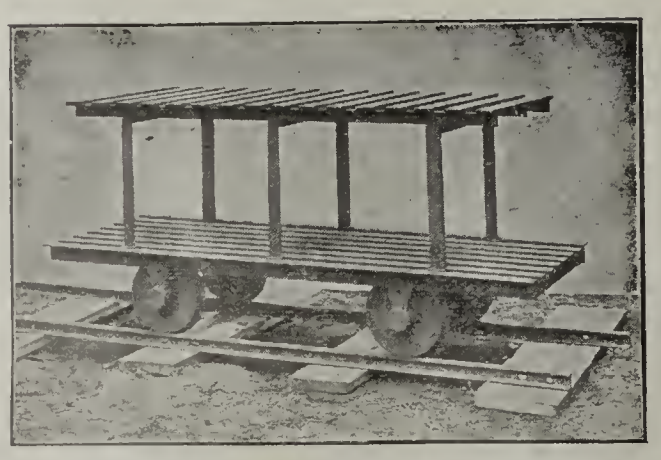

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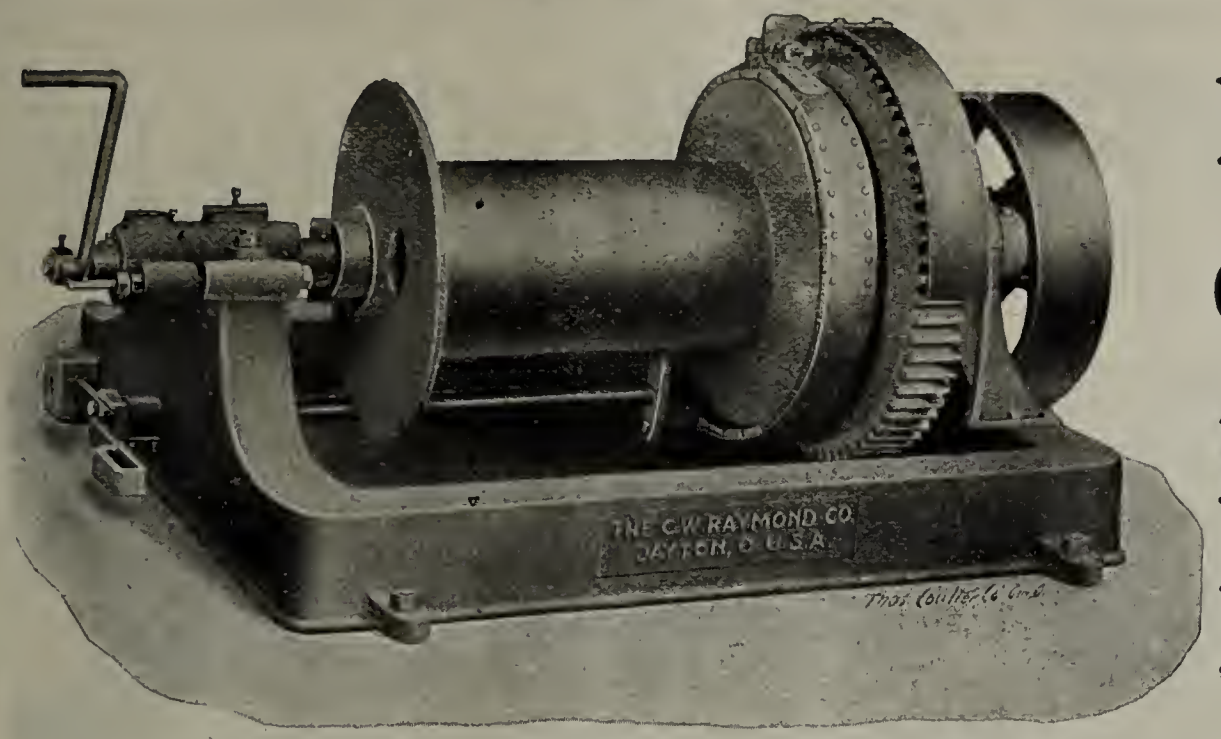

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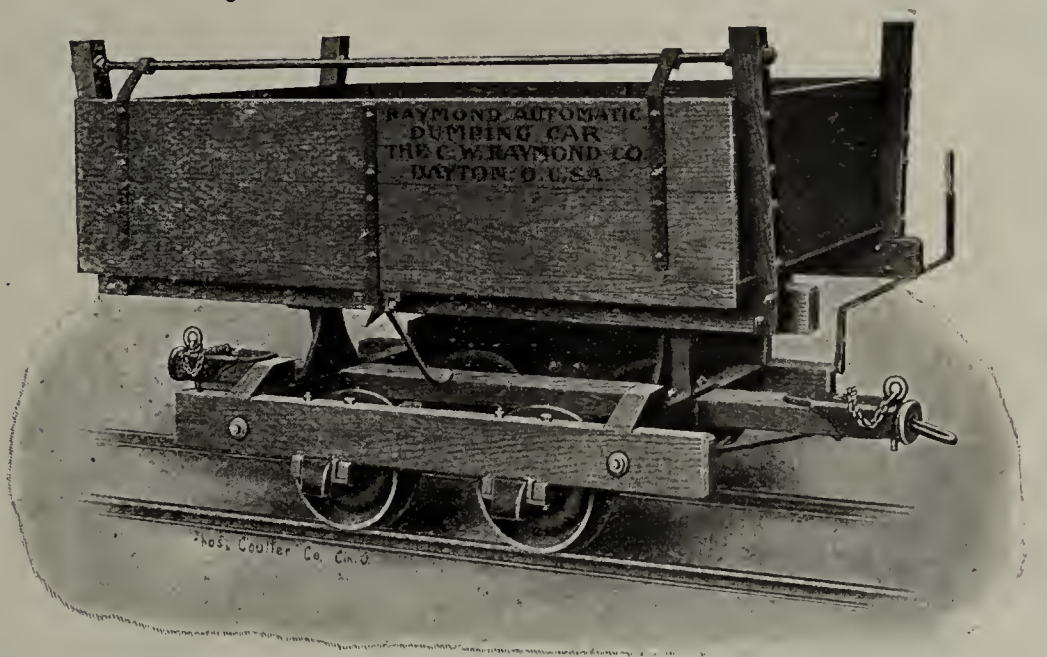

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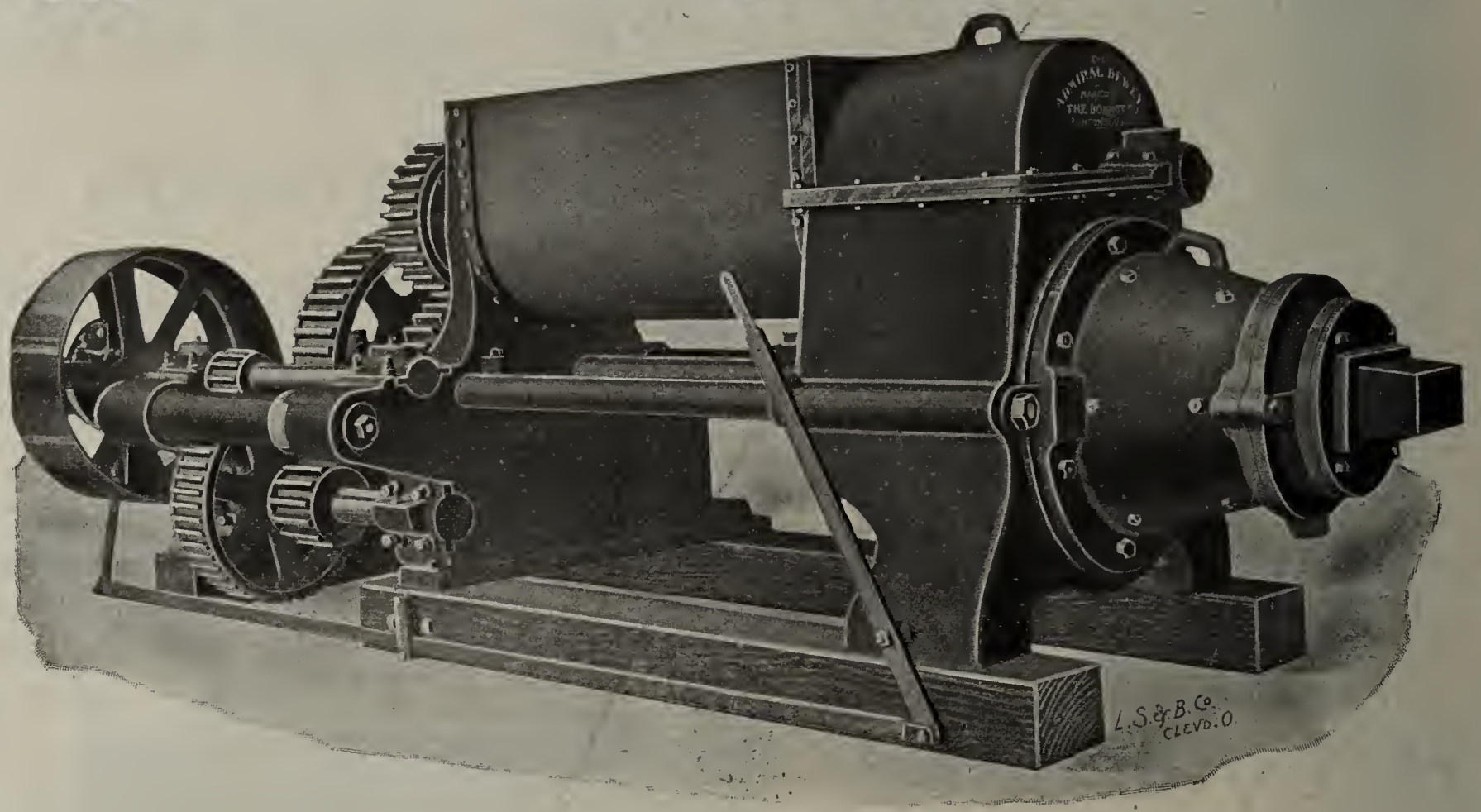
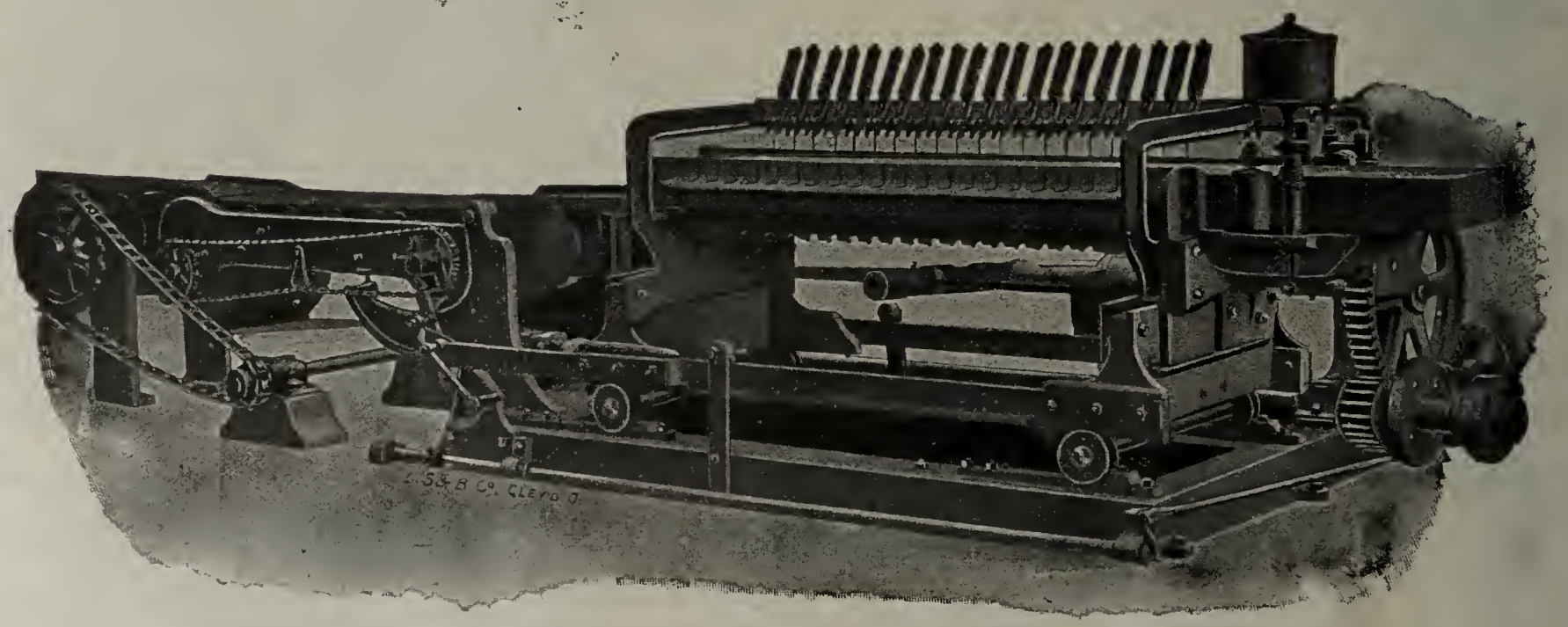
Modern Brick Machinery



SPECIAL COMBINED BRICK MACHINE AND PUG MILL 100,000 daily capacity.
AUGER BRICK MACHINES 10,000 to 100,000 capacity, five sizes.



AUTOMATIC SIDE CUT TABLE. Simple, positive, durable.

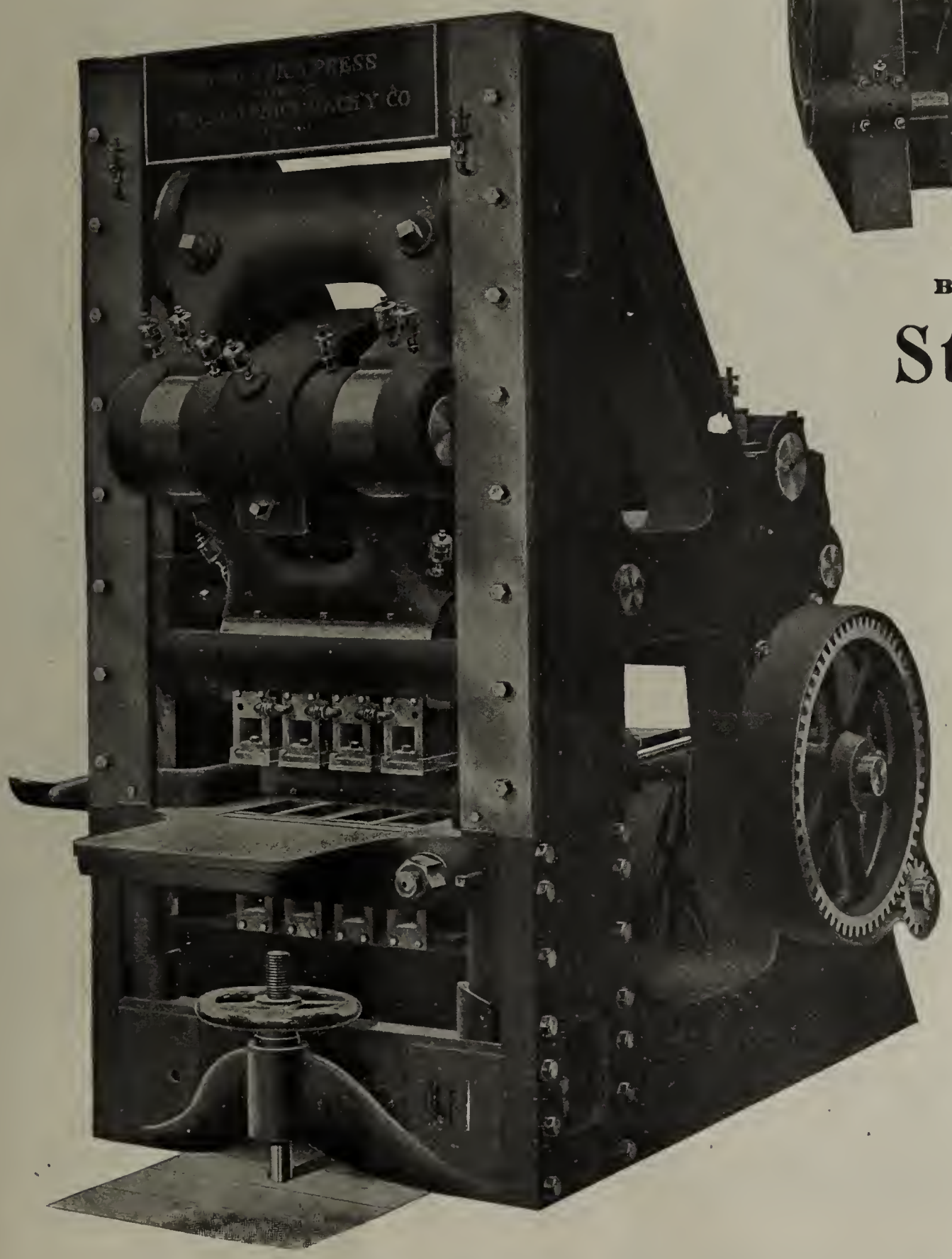
COMPLETE EQUIPMENTS FOR BRICKMAKERS. *ASK FOR CATALOGUE*

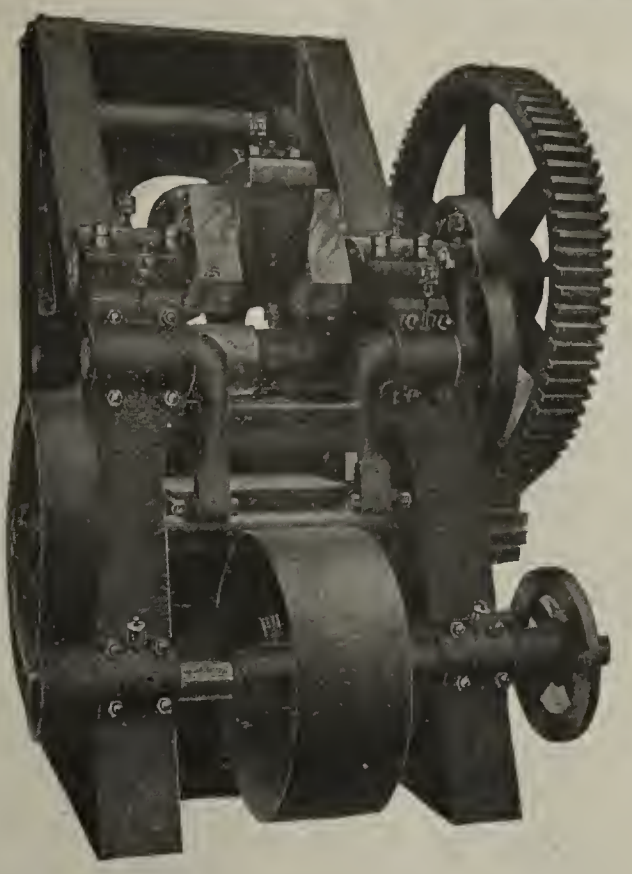
THE BONNOT COMPANY, Canton, Ohio.

—WESTERN AGENTS—

CHICAGO BRICK MACHINERY CO., - - 77 Jackson Boulevard, Chicago, Ill.

NEW MODEL BERG BRICK PRESS





Back View.

Still in the Lead

AND

One Step Further Forward

Even stronger than ever and all self-contained. Greater pressure and fewer working parts than any other machine. Simple, massive, compact. Running mechanism placed in rear, as shown in upper cut, enabling this machine to be SHIPPED IN ONE PIECE.

MANUFACTURED BY
ANDERSON FOUNDRY & MACHINE WORKS
Anderson, Indiana.

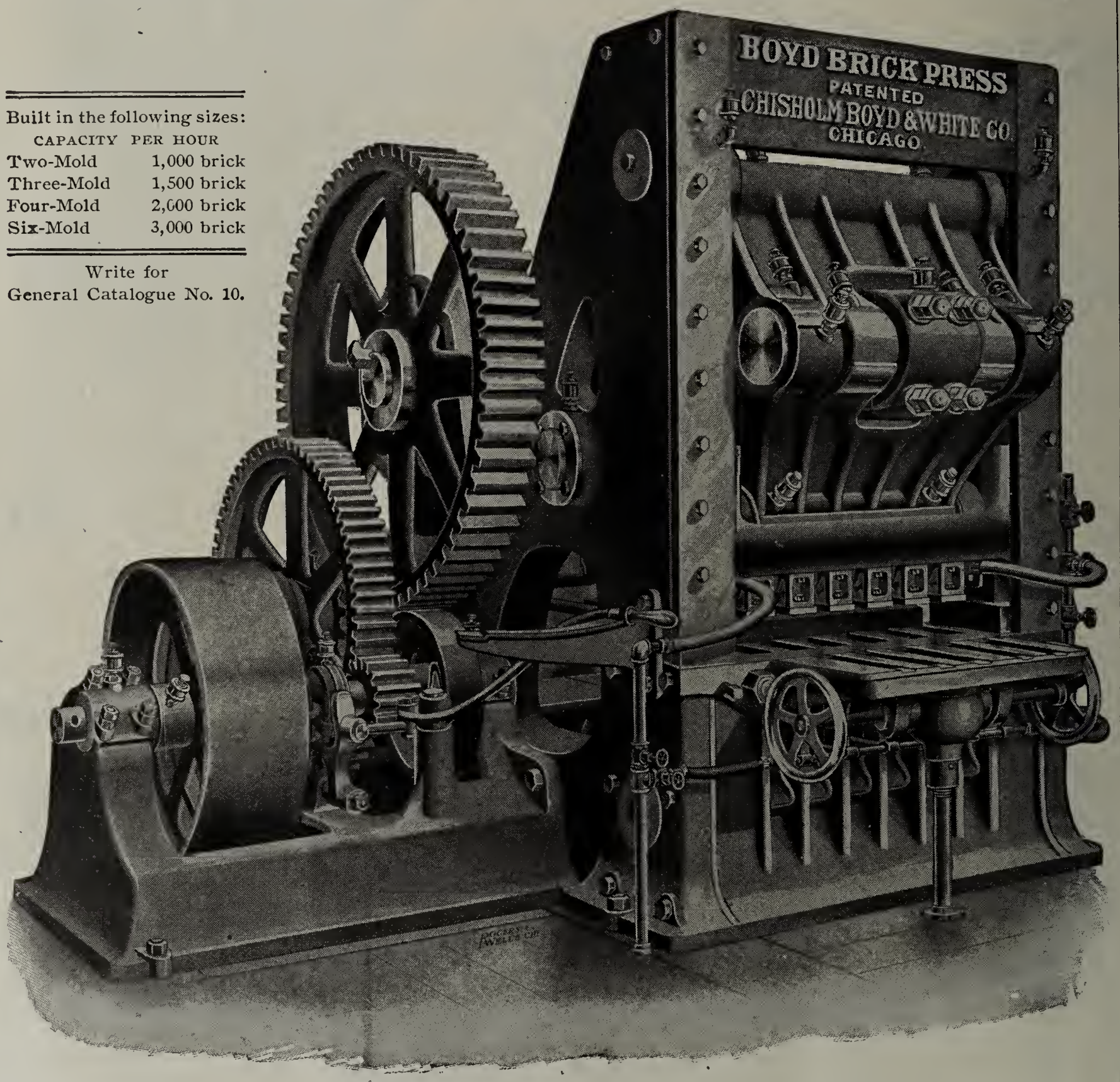
SOLD BY
CHICAGO BRICK MACHINERY COMPANY
77 Jackson Boulevard, Chicago.

The Boyd Brick Press

Built in the following sizes:

CAPACITY PER HOUR	
Two-Mold	1,000 brick
Three-Mold	1,500 brick
Four-Mold	2,000 brick
Six-Mold	3,000 brick

Write for
General Catalogue No. 10.



Another Record for the Boyd Press:

Six of our SIX-MOLD PRESSES in use on ONE YARD since 1892. Average cost of repairs for each machine One Dollar per year.

THE BOYD PRESS has always been distinguished for originality in design and construction. It will make better brick from clay or shale than can be made from the same material by any other press. It is selected and purchased by the most progressive Brick Makers. The largest and most successful brick plants in the country are using Boyd Presses.

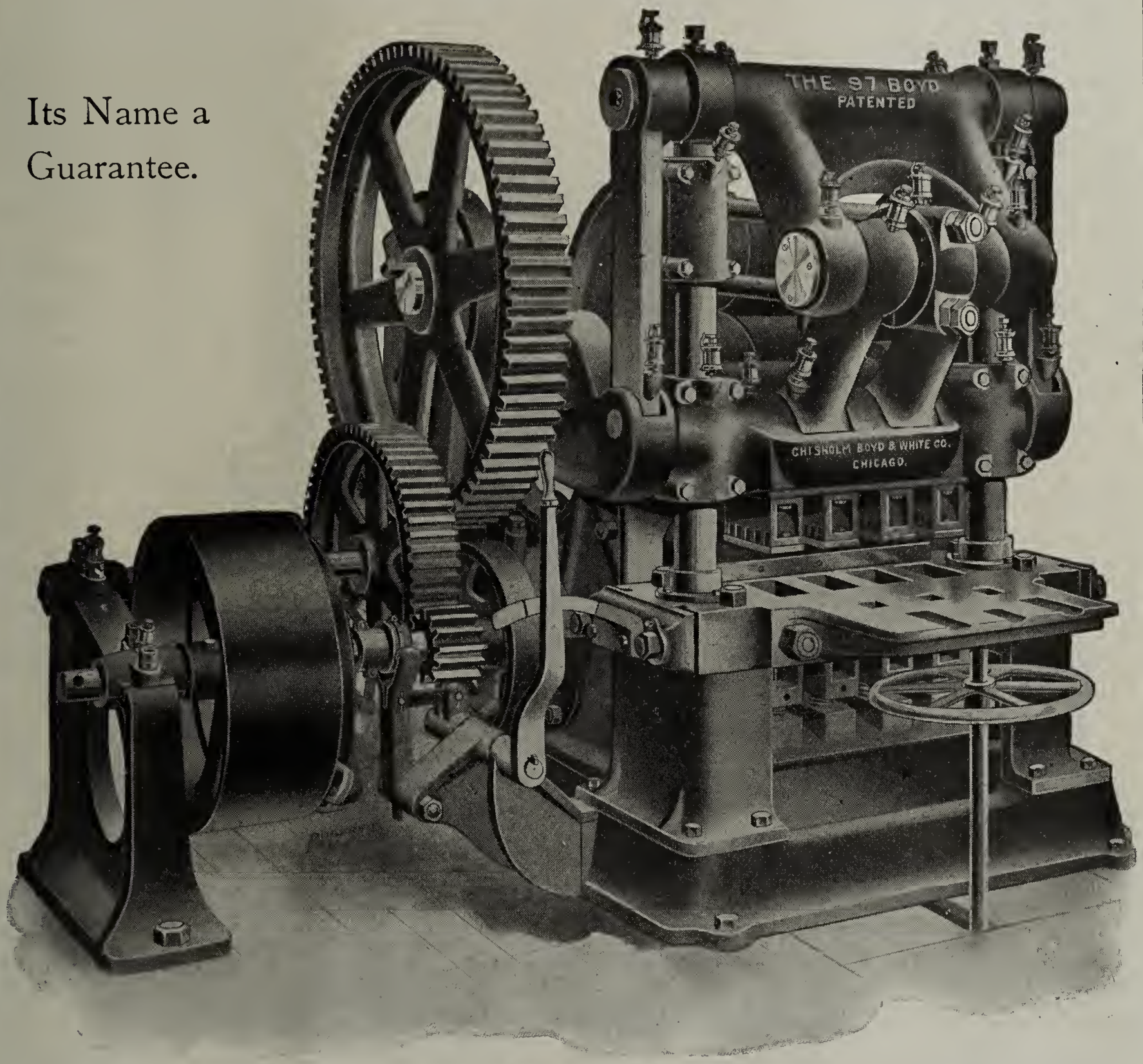
Chisholm, Boyd & White Company

Office and Works, 57th and Wallace Sts. **CHICAGO, ILL.**

The Boyd Brick Press

The '97 Model

Its Name a Guarantee.



THE '97 MODEL BOYD BRICK PRESS has enormous strength and great durability; it is compact; the adjustments are convenient; it operates quietly and smoothly; the workmanship and material are of the best; the design ingenious, and shows the most perfect application of scientific and mechanical principles to the art of brickmaking.

THE BOYD is the only Brick Press provided with an independent adjusting device for regulating the amount of clay in the molds and the pressure on the brick. This feature positively ensures equal pressure and finish on both sides of the brick, and no granulated or soft centers.

Sent on trial and fully guaranteed. Seventy presses of this pattern now in use. Cannot be broken in pressing brick. Write for descriptive catalogue No. 9.

Chisholm, Boyd & White Company

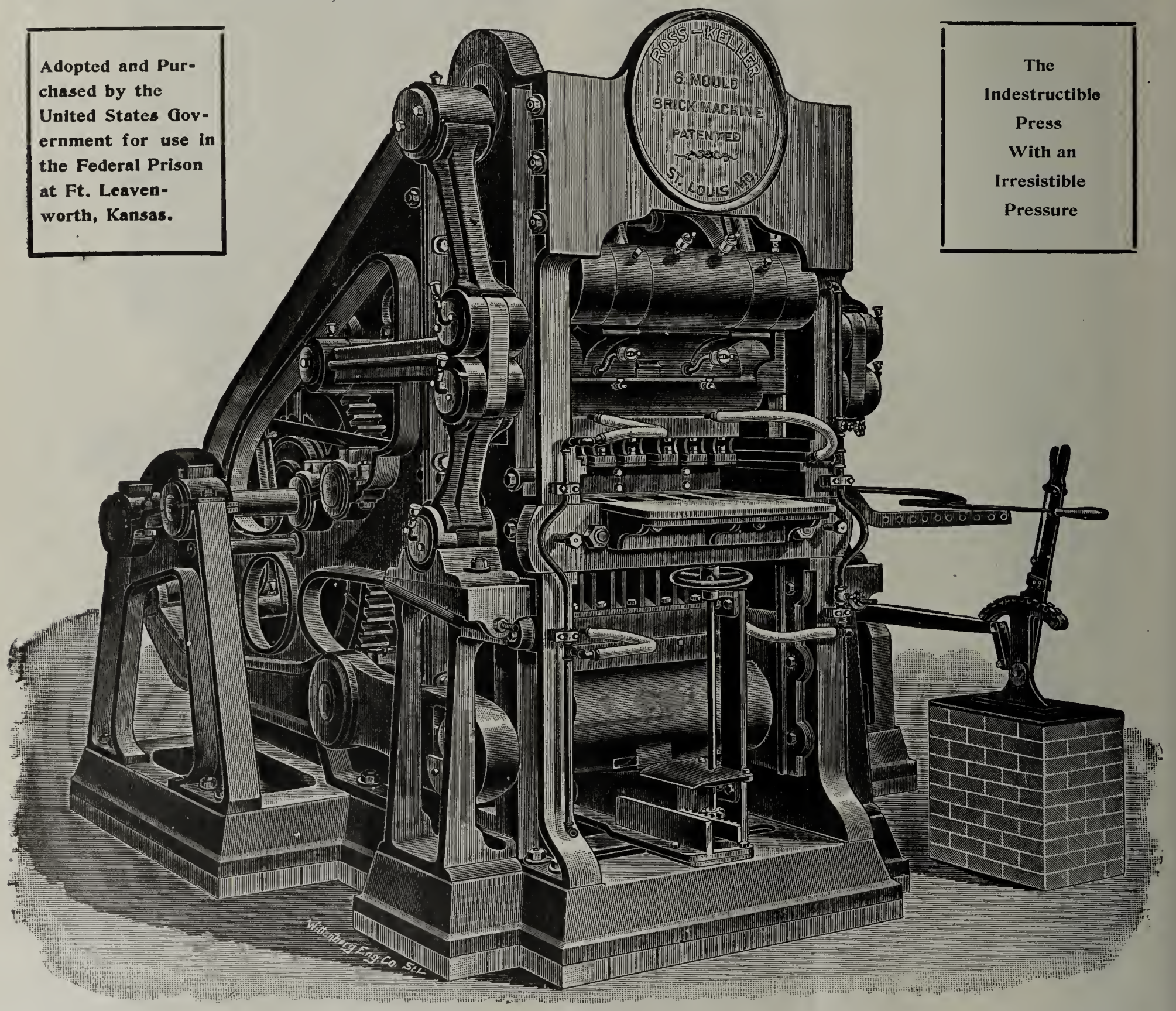
Office and Works, 57th and Wallace Sts. **CHICAGO, ILL.**

SAND-LIME BRICK MACHINERY

We are building and equipping Sand-Lime Brick Plants complete and we guarantee satisfactory results : : :

We manufacture a full line of Clay & Shale Dry Press Machinery : : : : : : :

Adopted and Purchased by the United States Government for use in the Federal Prison at Ft. Leavenworth, Kansas.



The Indestructible Press With an Irresistible Pressure

For prices and particulars address

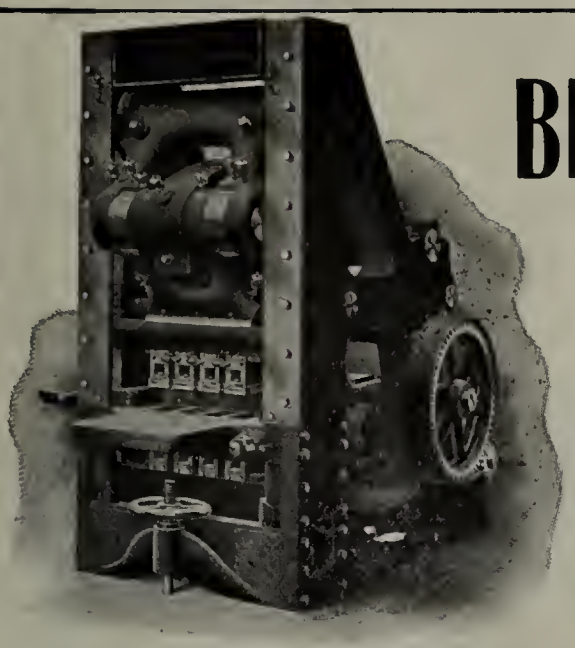
Ross-Keller Triple Pressure Brick Machine Co.

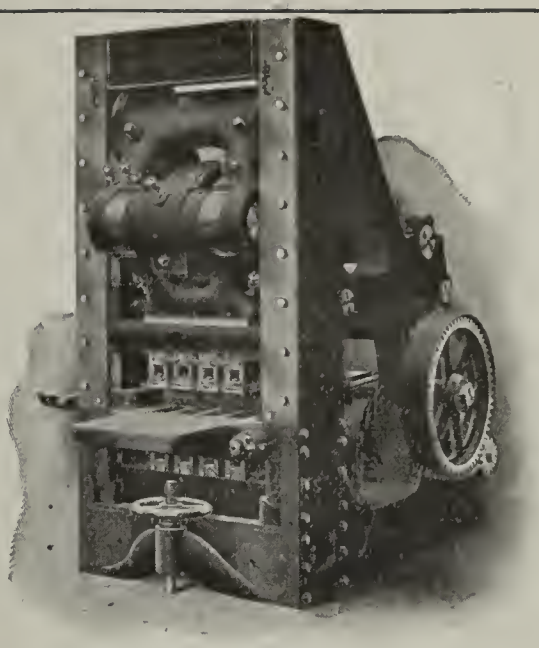
GEO. M. McDOWELL, Sales Agent for Pacific Coast, Portland, Ore.

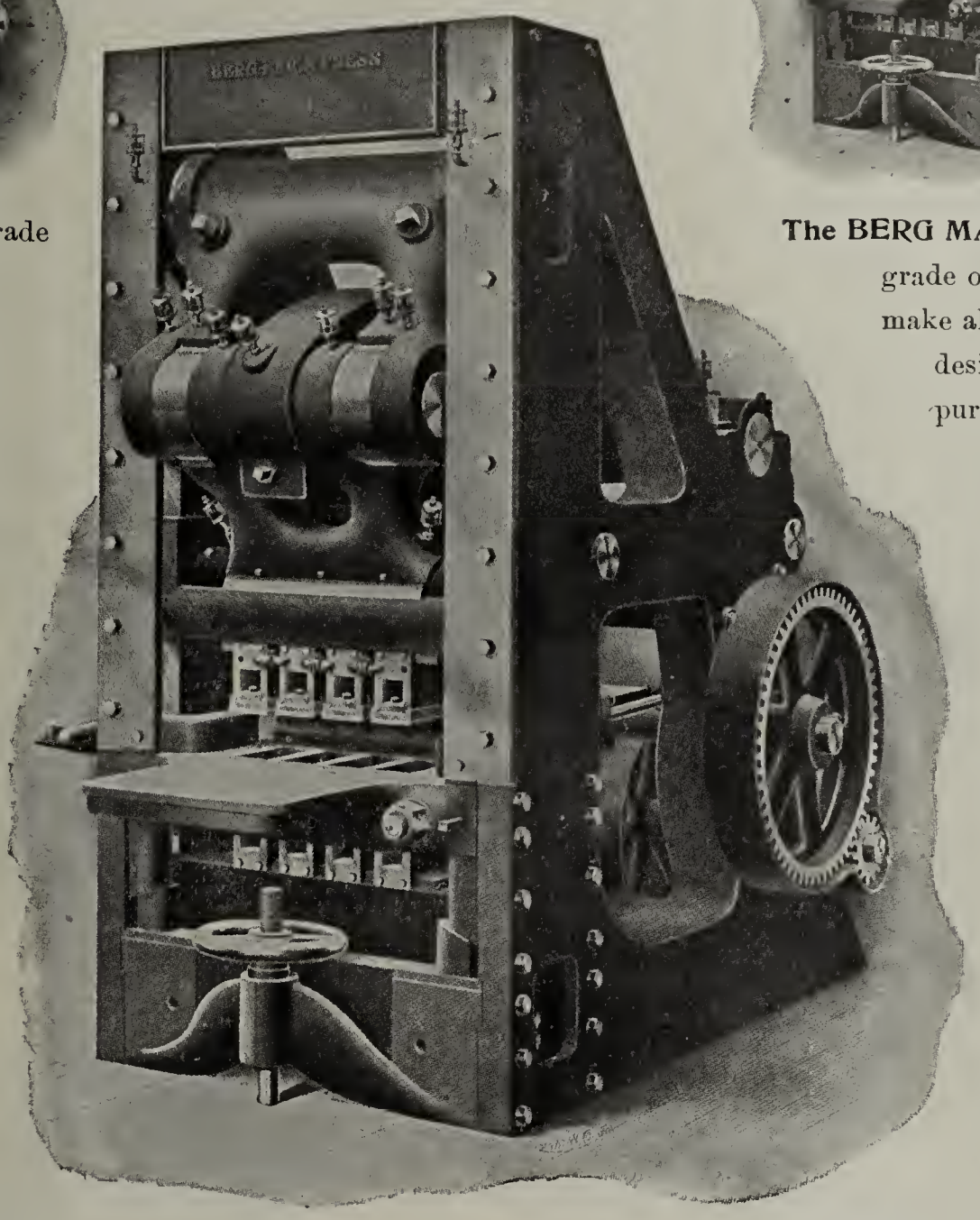
FULLERTON BUILDING, ST. LOUIS, MO., U. S. A.

BERG BRICK PRESS

The highest development of the Art of Brickmaking Machinery so pronounced by the United States Government.







The BERG for the highest grade of pressed brick of shale or clay. It makes all kinds of shapes and sizes of brick. Changes from one shape to another can be made in less than an hour's time.

The BERG MAKES the highest grade of fire brick. Can make all kinds of shapes desired for fire-brick purposes.

First-Class Workmanship. Cut Gearing. Fully Warranted.

Three distinct pressures make the brick evenly pressed all through. No granulated centers of the brick.

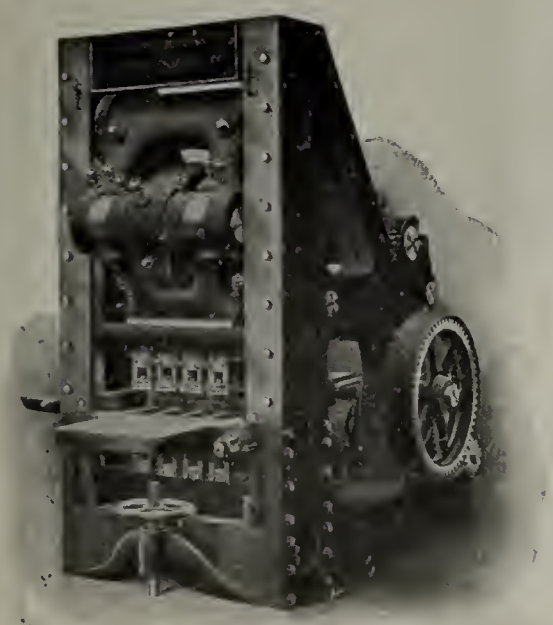
The BERG makes the best sand-lime brick and cheapest because it is the strongest machine and gives the highest pressure. Thirty-five sand-lime plants in United States use the **BERG** Brick Press SUCCESSFULLY.

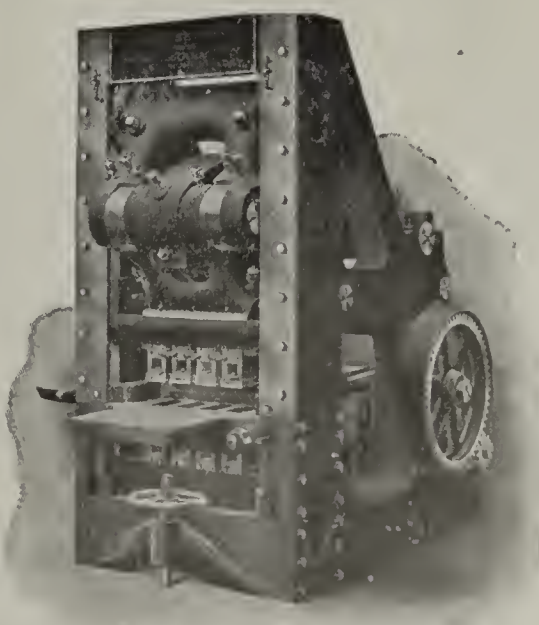
The BERG is the best for sand and cement because of its strong pressure. Uses less cement, makes cheaper brick.

The 1905 Berg Press

Many other steps further forward in improvement and highest grade of material and workmanship, also cut gearing. Fully guaranteed as to its success. Manufactured by its inventor in Toronto, Canada, at the Bertram Engine Works Co. Plans and specifications on the different kinds of plants furnished, also all equipments.

For prices and full particulars, address





A. BERG & SONS

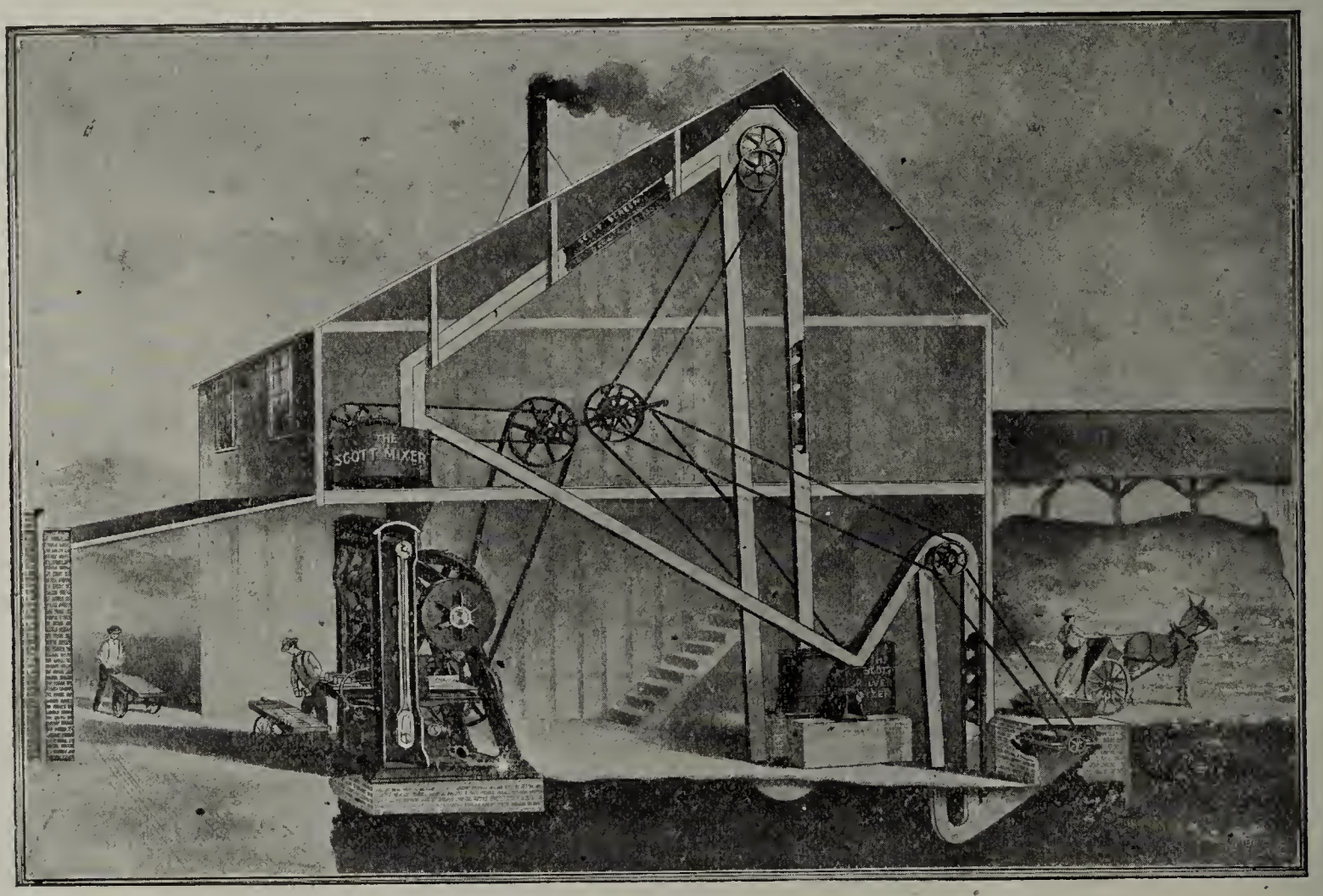
OFFICE: MANNING CHAMBERS

TORONTO, ONT., CANADA

Rojestvensky

certainly was unfortunate, for while he had the knowledge of tactics within himself he was not backed up with the necessary *equipment, enthusiasm, organization.*

In waging our war against competition we claim that in our campaign we know that our facilities for manufacture are the very best; our organization is practically complete, and our enthusiasm—well, you can't imagine how strong that is unless you are operating an Andrus Press.

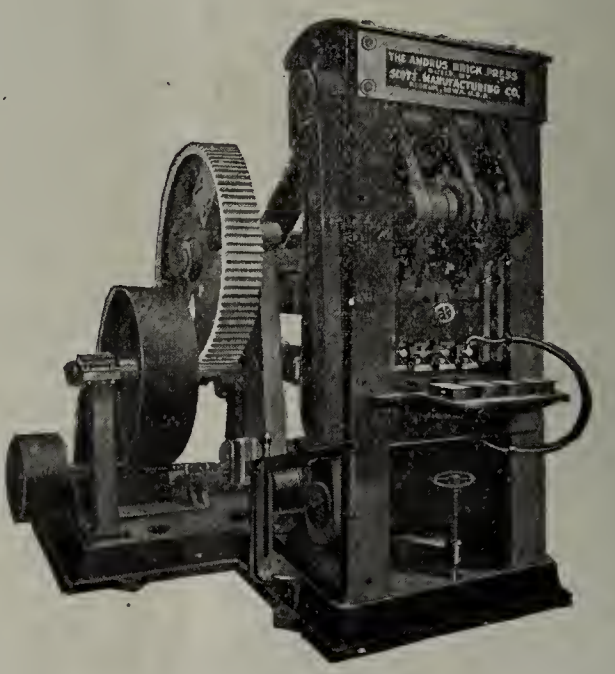


THE SCOTT NOISELESS PLANT.

We Install Complete Plants

Our Drafting Department Is At Your Service.

We cordially invite the brickmaker and capitalist to come to our city and see our presses in operation in the "St. Louis District," which is conceded to be the greatest Dry Press center in the world.



THIS IS THE PRESS THAT SCOTT BUILDS.

SCOTT MANUFACTURING CO.,

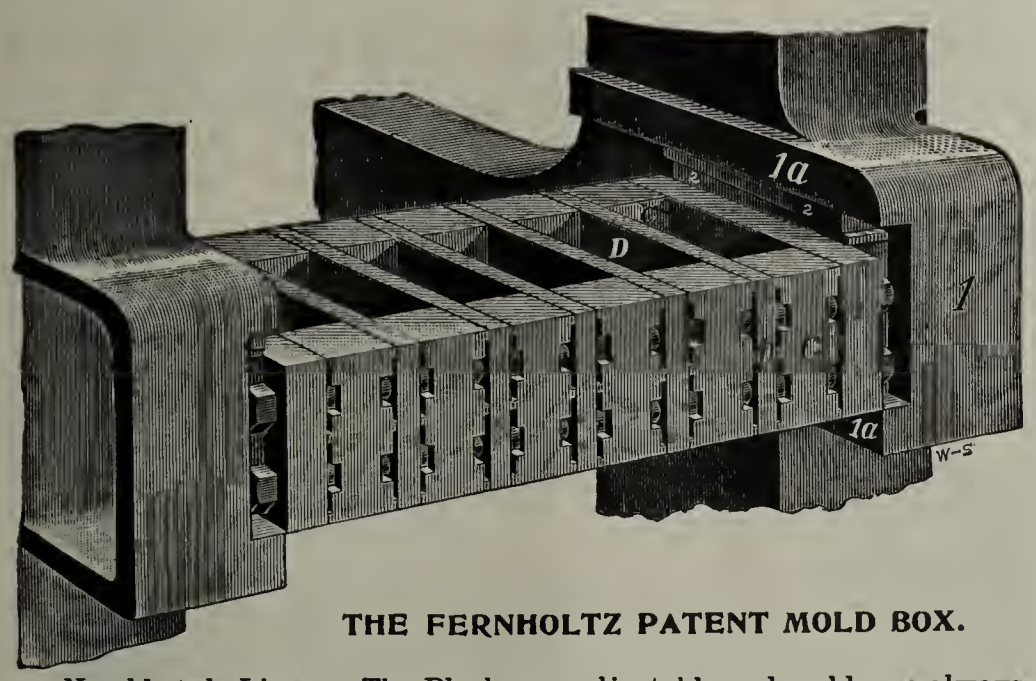
Commonwealth Trust Building, Saint Louis, Missouri.

The Fernholtz Brick Machinery Co.

Manufacturers of

The Celebrated Fernholtz Dry Press

Four mold Press 20,000 daily capacity. Six mold Press 30,000 daily capacity

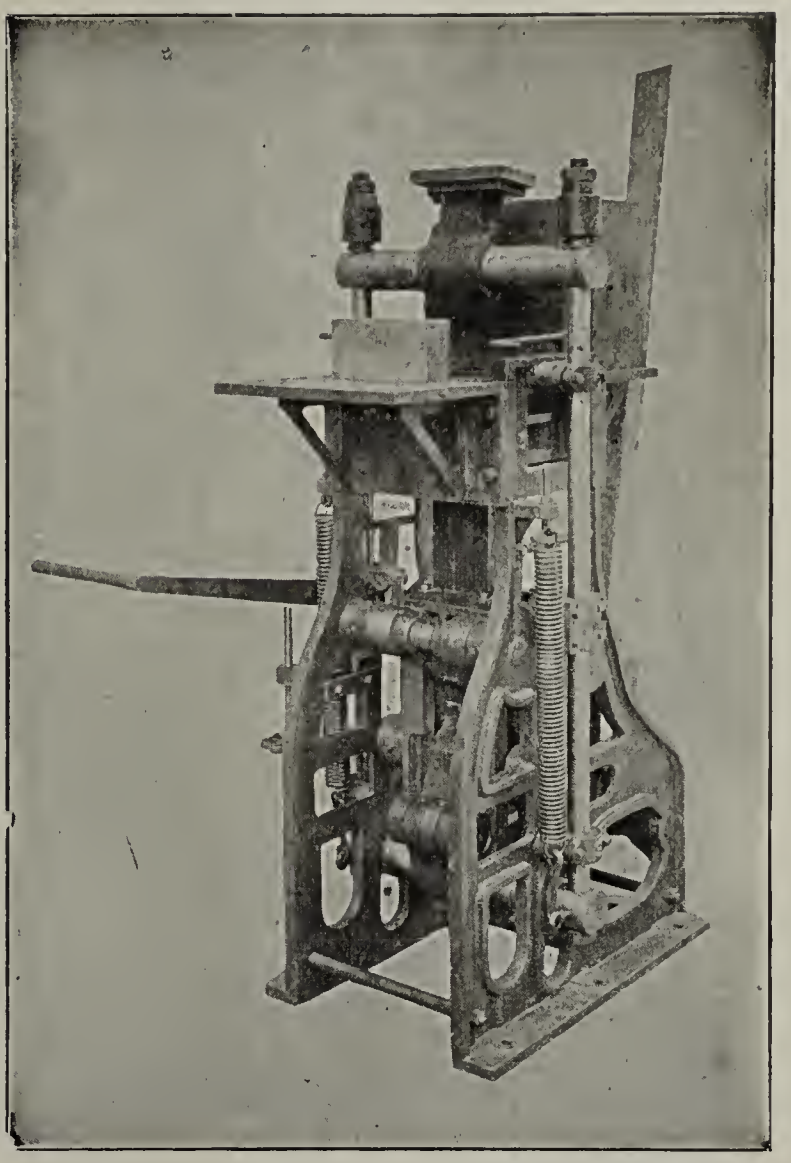


THE FERNHOLTZ PATENT MOLD BOX.

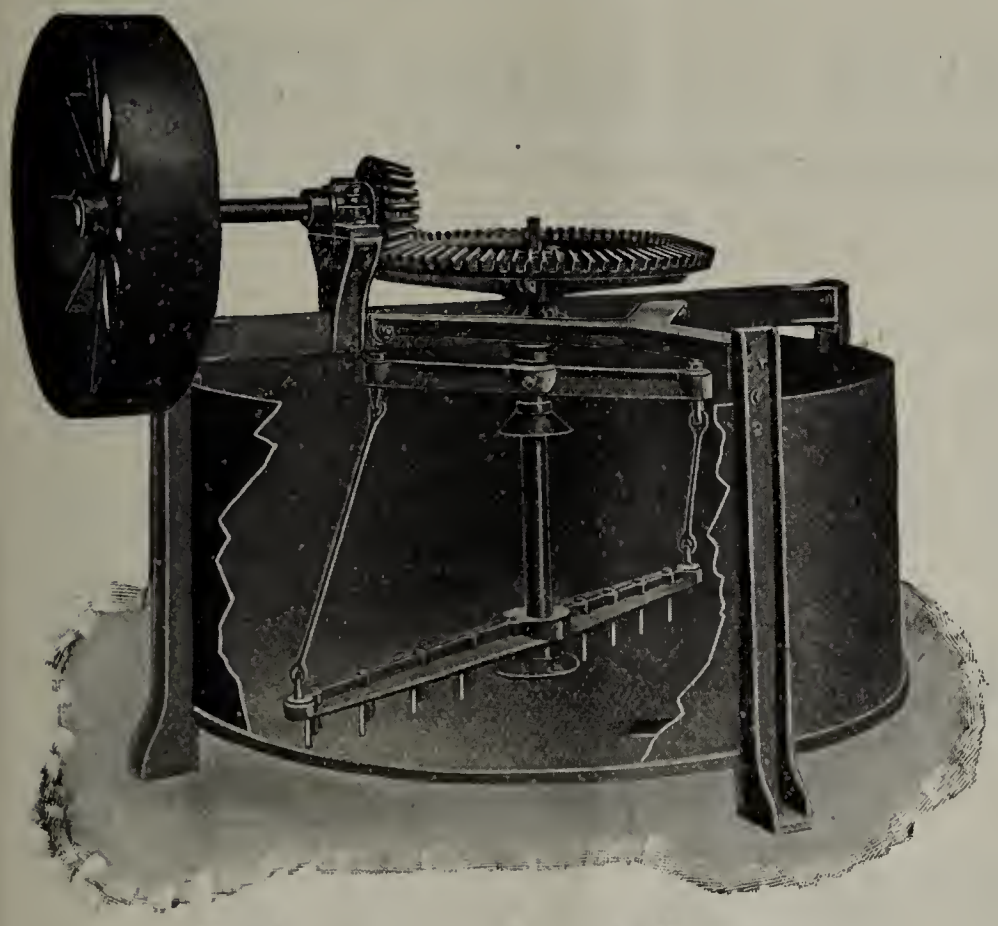
No old style Liners. The Blocks are adjustable and molds are always one size. We have put them in most all makes of Dry Press machines. Easily and quickly adjusted. They are made entirely out of chilled iron, the hardest known metal.

GRATH PATENT HAND POWER PRESS.

Especially adapted for ornamental designs. Any size brick up to 12⅝ inches long, 10 inches wide and 4¼ inches thick.
Brick set into kiln direct from press.



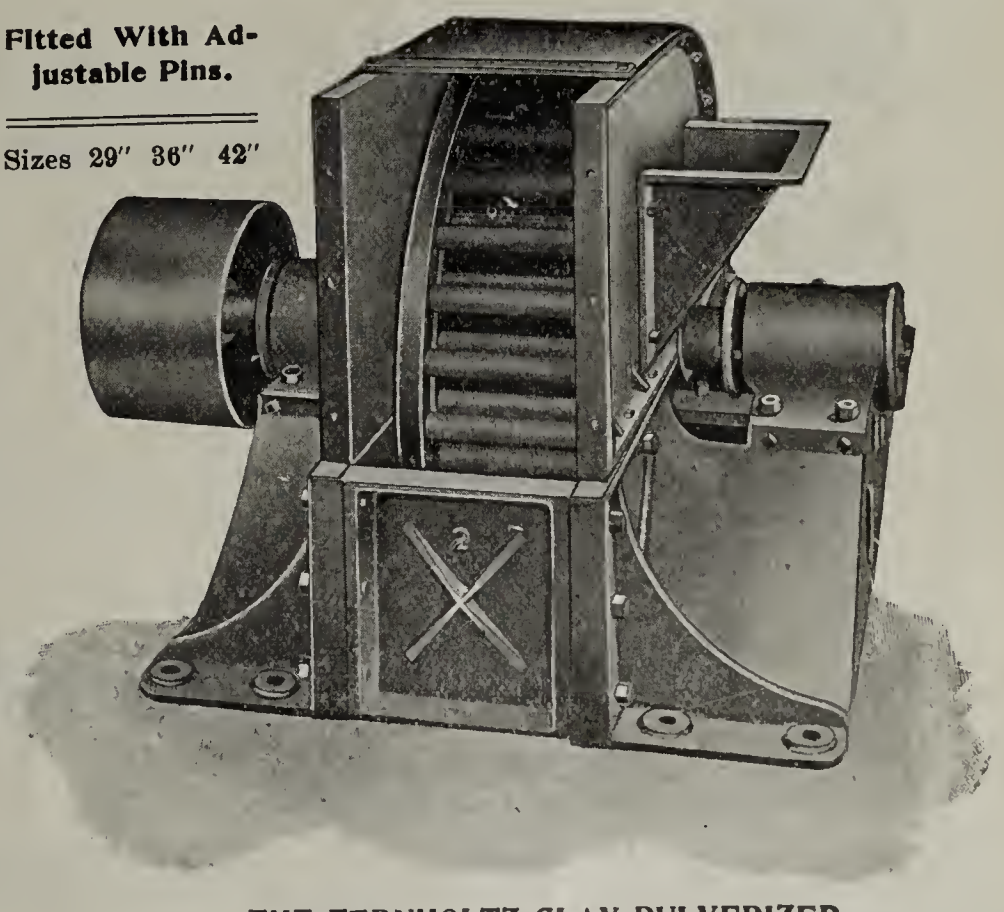
GRATH PATENT HAND POWER PRESS.



A GOOD MIXER IS ALWAYS APPRECIATED.

Fitted With Adjustable Pins.

Sizes 29″ 36″ 42″

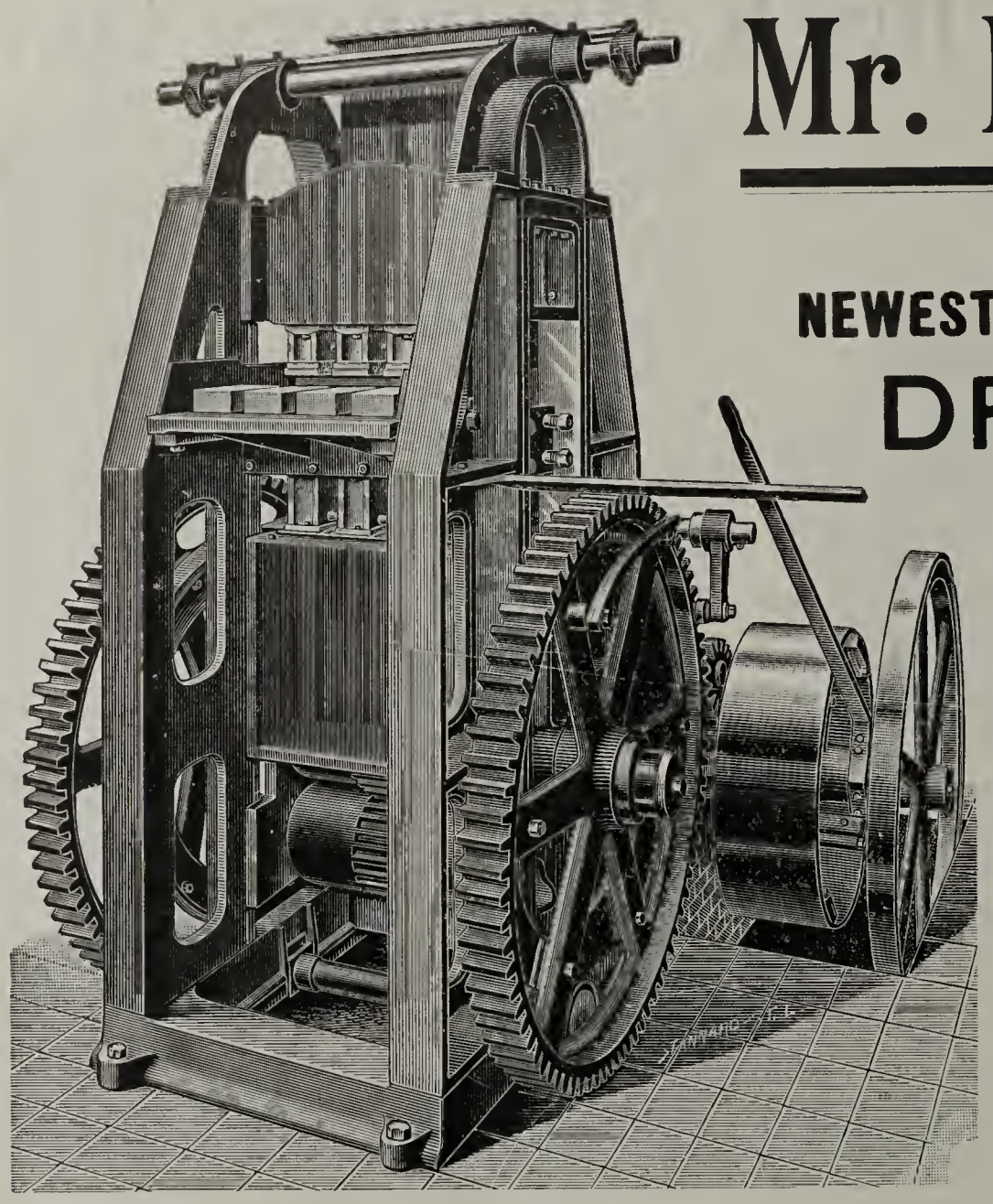


THE FERNHOLTZ CLAY PULVERIZER.

The Fernholtz Brick Machinery Co.

Cable Address "Fernbrick." Western Union Code.

Boyle Avenue and Old Manchester Road, ST. LOUIS, MO., U. S.A.



Mr. Brickmaker

Are you looking for the

NEWEST, BEST AND CHEAPEST IN

DRY-PRESS BRICK MACHINES?

If so, you cannot afford to overlook the strong points of excellence and the remarkable **simplicity, strength** and **efficiency** fonnd in

THE RELIANCE

"The Machine with a Future"

Radical departure from old principles.

Unique in construction, sound in principle, unrivaled in attainment!

Makes not only Brick but Money

A FEW POINTS:

1. Weight and Floor Space about one-half that of any other rick Machine.
2. Compression of Clay Perfect and Uniform. (Entirely new Principle).
3. Every Brick is a Face Brick. There are No Granulations.
4. Adjustment permits any pressure desired (A Feature peculiar to the **RELIANCE.**)
5. Cheapest because having fewest parts. (Also cheapest to keep in repair).

EMINENTLY PRACTICAL AND ECONOMICAL

WRITE TO-DAY FOR PARTICULARS.

SEND CLAY FOR SAMPLE BRICKS.

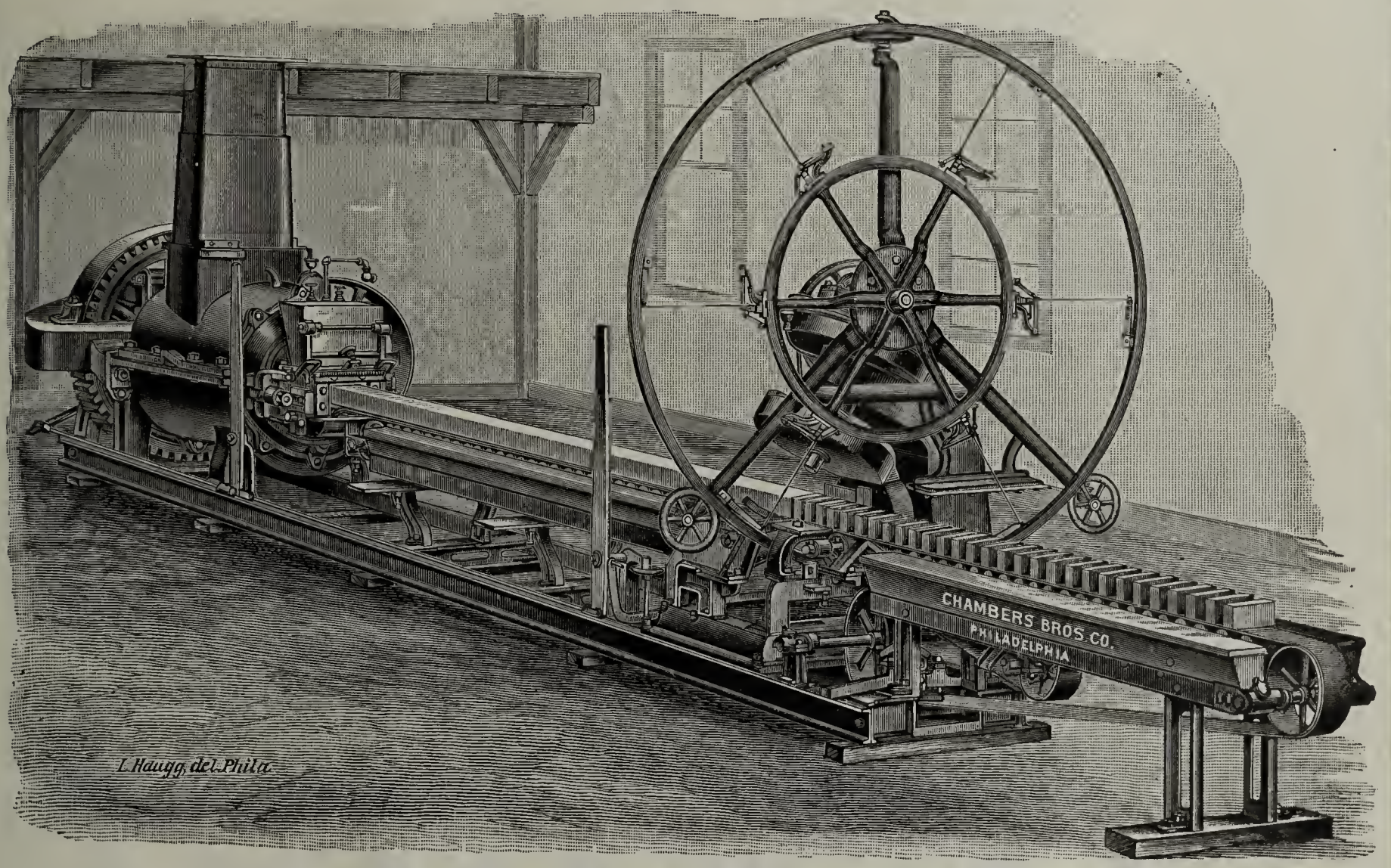
Made By the

RELIANCE MACHINE AND TOOL WORKS

ST. LOUIS, MO.

MACHINERY FOR BUILDING BRICK
AND FOR STREET PAVERS

ROUND CORNER PAVING BRICK WITHOUT REPRESSING



THE CHAMBERS AUTOMATIC SIDE-CUT BRICK MACHINE.

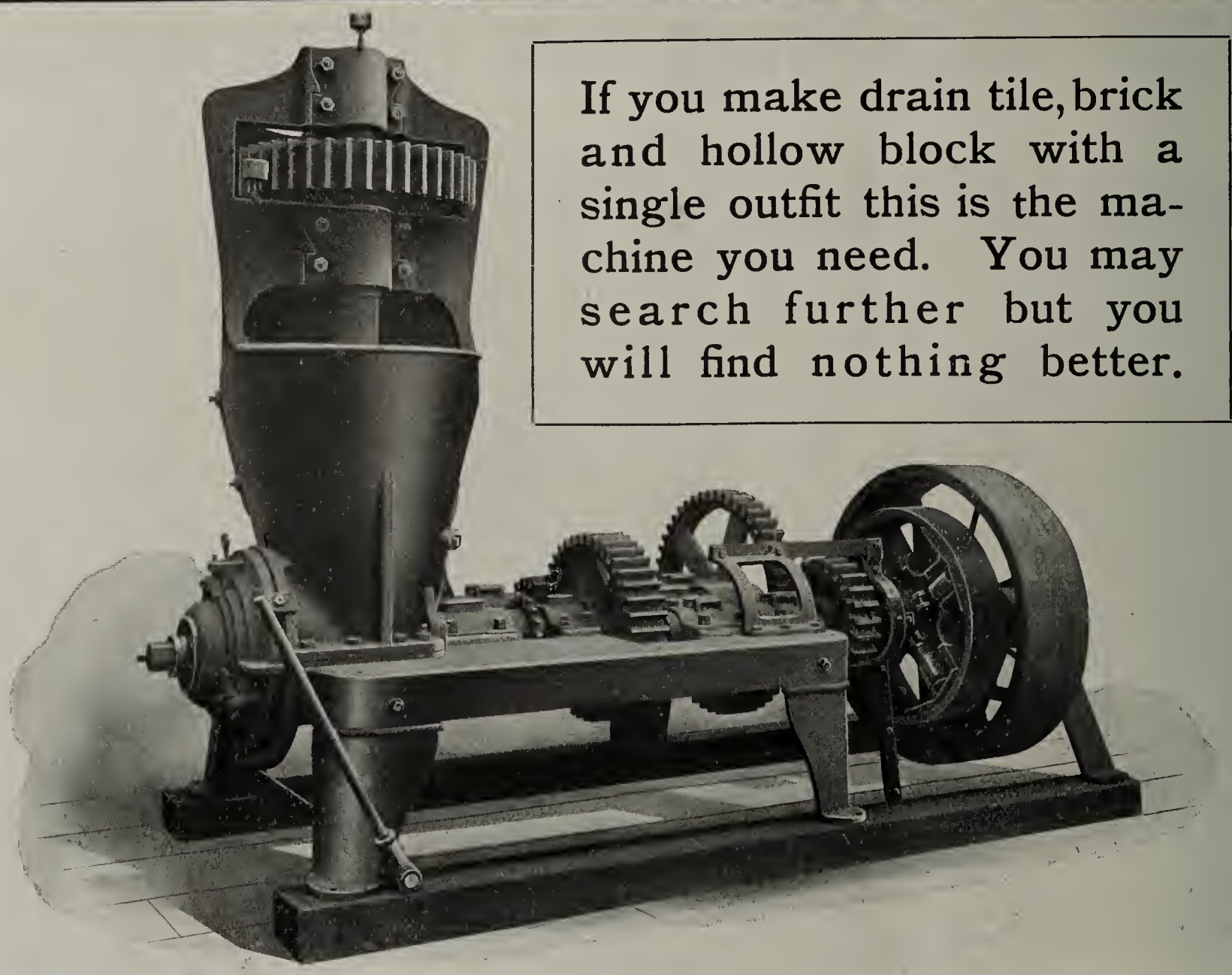
Automatic End Cut Brick Machines of five sizes, having capacity from 10,000 to over 100,000 brick daily under favorable conditions.

CHAMBERS BROTHERS COMPANY
52D AND MEDIA STREETS

E. R. FRAZIER, Chicago Agent,
59 West Jackson Boulevard.

PHILADELPHIA, PA.

THIS IS THE ONE



If you make drain tile, brick and hollow block with a single outfit this is the machine you need. You may search further but you will find nothing better.

THE BREWER NO. 10 A

Is an improved pattern of an old time successful machine. Everybody knows Brewer Upright Machines are tile makers. Nobody disputes it, and this machine is the best one ever put out from Brewer Shops.

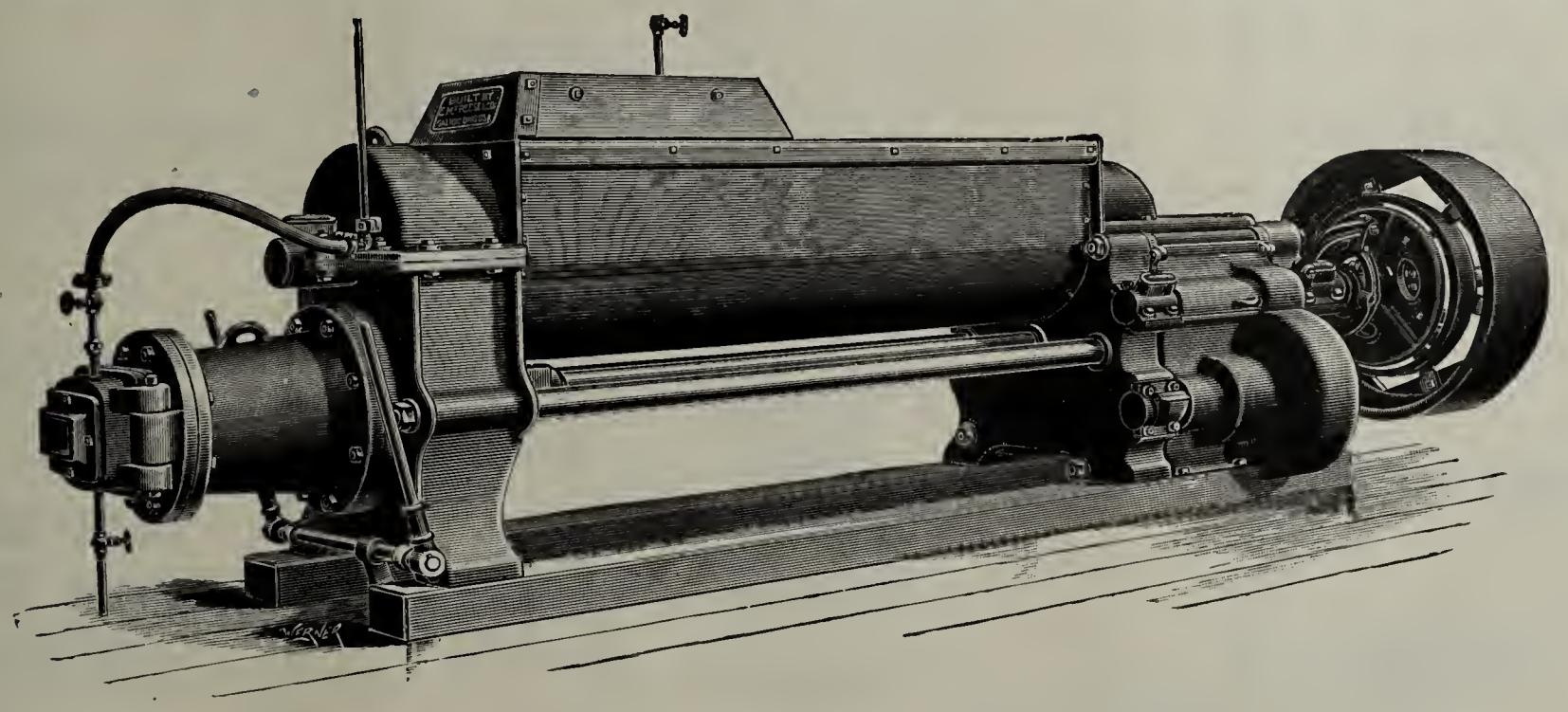
A FEW SPECIFICATIONS

Pugging shaft, 6 inch diameter; knives, forged steel; augers, white iron; up-thrust bearing, marine pattern; upright body, cast in one piece.

WRITE FOR FULL DESCRIPTION AND SPECIFICATIONS

H. BREWER & CO., TECUMSEH, MICHIGAN.

UNION BRICK MACHINES



We build these Machines in five sizes. Capacities to 10,000 brick per hour.

Several hundred are in everyday use. They do first-class work and are convenient, economical and durable. This can be verified by investigation.

We also build Brick Machines with separate Pug Mill.

Don't forget our Automatic Cutters. **They give satisfaction.**

State your requirements and let us furnish particulars.

E. M. FREESE & CO.

GALION - - - - OHIO

SEWER PIPE MACHINERY

PRESSES AND DIES

I. E.

TRAP DIES

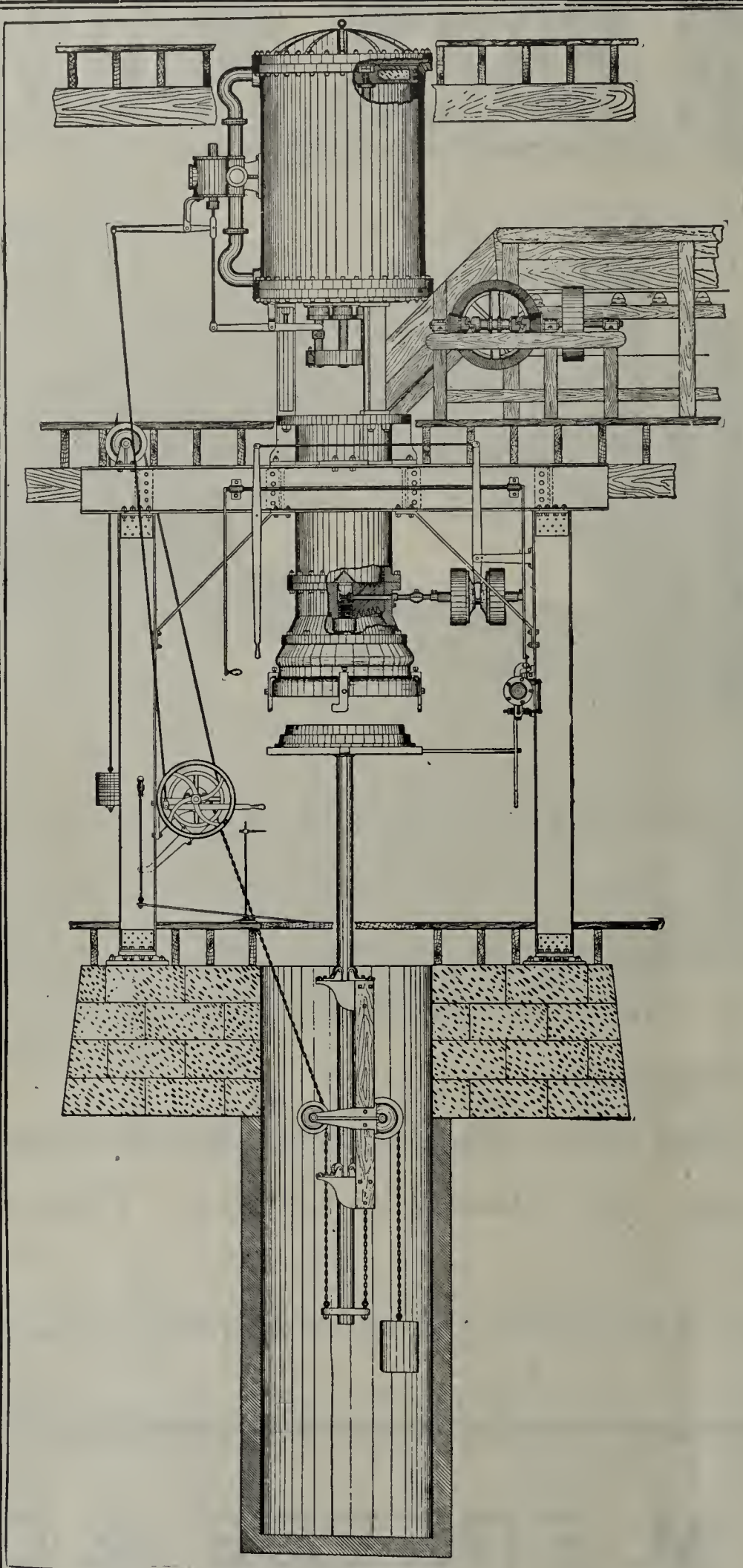
CLUSTER TILE DIES

FLUE DIES

COPING DIES

RING DIES

TUYERE AND SHAPE DIES FOR BESSIMER FURNACES



NOZZLE AND SLEEVE PRESSES

TUYERE PRESSES

DOUBLE END HORIZONTAL STEAM PRESSES

DRY AND WET PANS

CLAY MILLS COMBINATION CLAY PANS

CLAY WORKING TOOLS

THE TURNER VAUGHN & TAYLOR CO.

WRITE FOR PRICES STATING CAPACITY

Cuyahoga Falls, Ohio, U. S. A.

Leadership means Superiority, which tacitly acknowledged

SHOWS UNDENIABLE MERIT

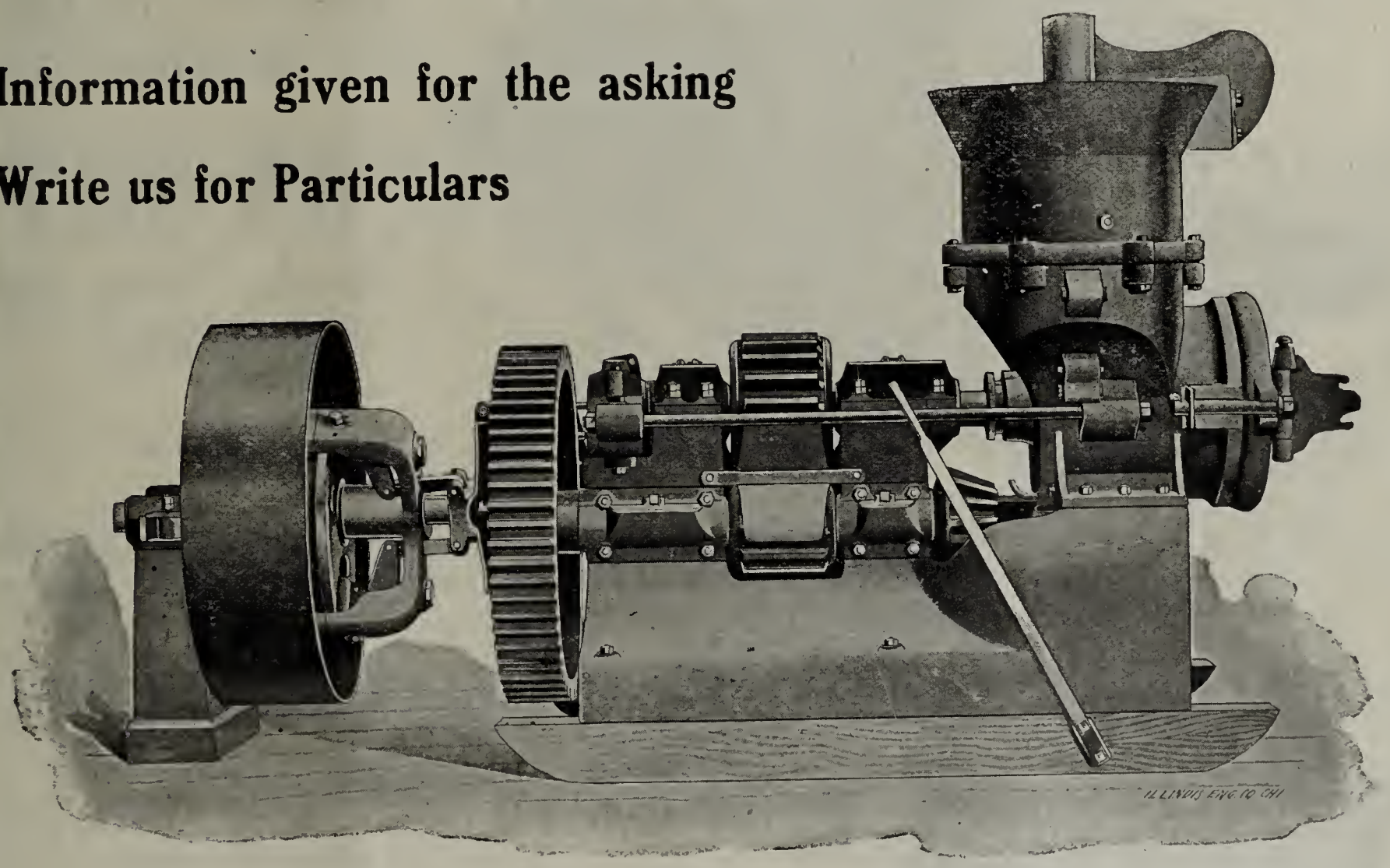
Success is based upon intrinsic worth and the success of the "WONDER" is phenomenal

Correct principal and thorough integrity in construction have made its supremacy unquestionable.

It works where others fail.

Information given for the asking

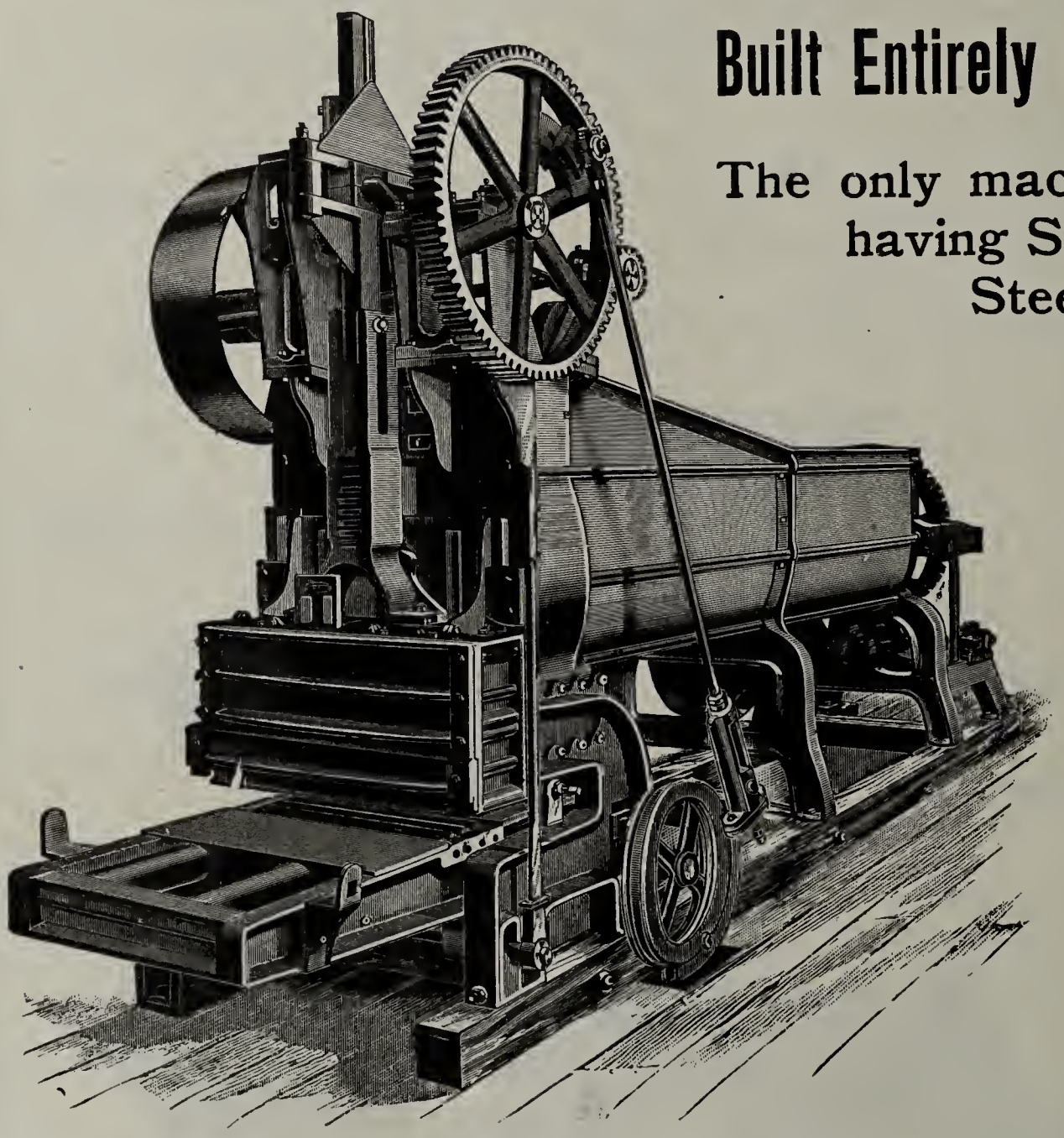
Write us for Particulars



The Wallace Mfg. Co.

FRANKFORT, IND., U. S. A.

THE POTTS
HORIZONTAL BRICK MACHINE



Built Entirely of Iron and Steel.

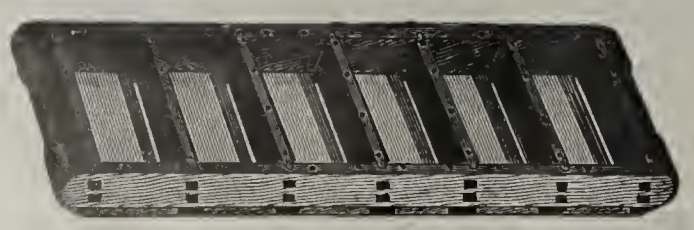
The only machine of this class having Steel Gear and Steel Shaft.

Built of the Best Material by the Best Workmen.

Simple, Strong and Durable.

No extra pug mill required to enable working the clay direct from the bank. Its great strength enables working the clay as stiff as practicable, insuring brick which will be STRAIGHT and SQUARE.

THE LEADER OF ALL SAND MOULD MACHINES.



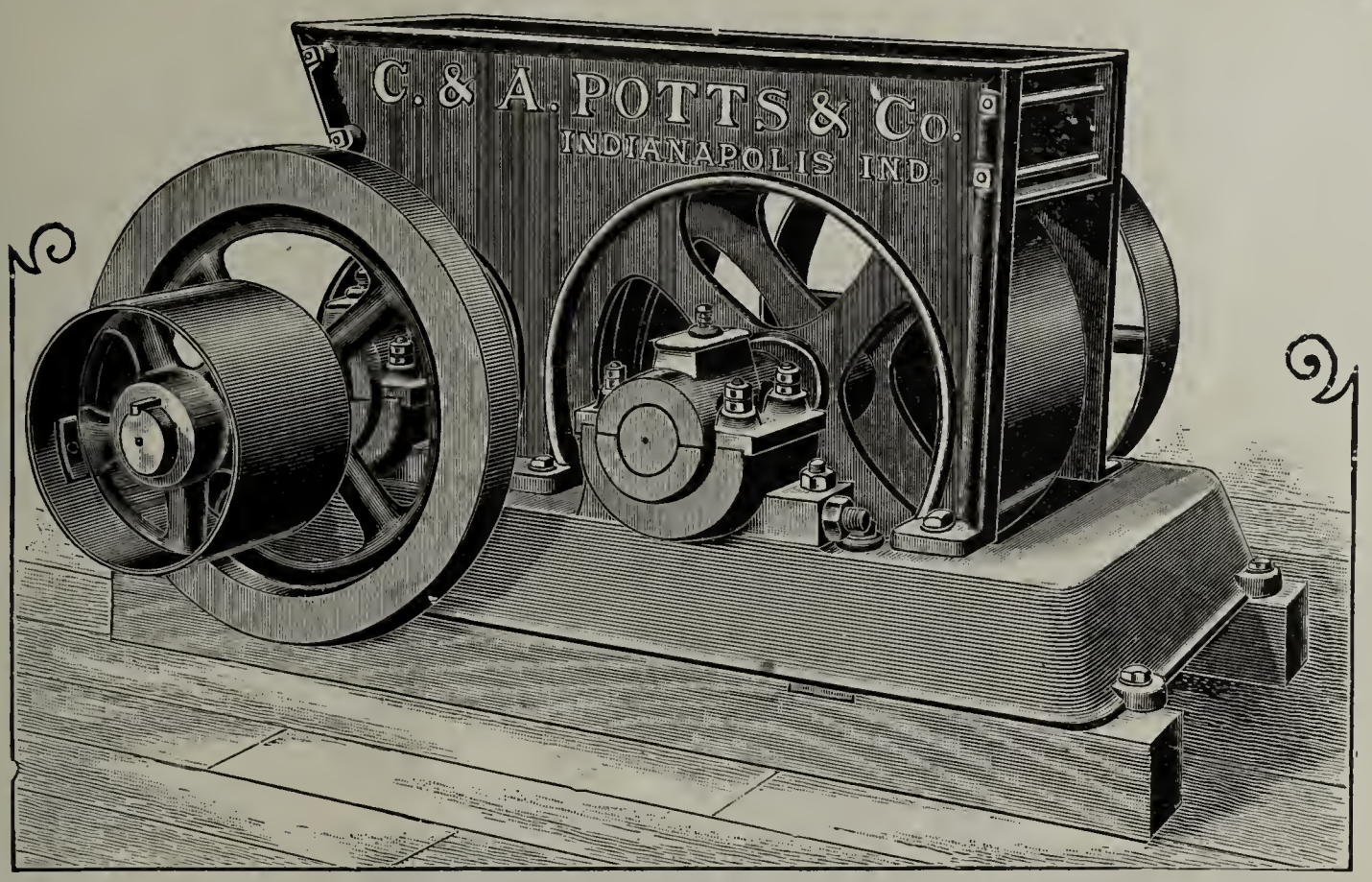
BRICK MOULDS A SPECIALTY

QUALITY IS OUR AIM.

We manufacture a complete line of Brick Yard Supplies. Write for prices.

C. & A. POTTS & CO., Indianapolis, Ind.

THE POTTS DISINTEGRATOR



Is not a spite machine, but is built the best possible. Having Heavy Chilled Rolls, Ring Oiling Bearings, Shafts of Steel and large in Diameter. The most successful machine for grinding out sticky clays and separating the stone.

THE POTTS MOULD SANDER

Simple in Construction,

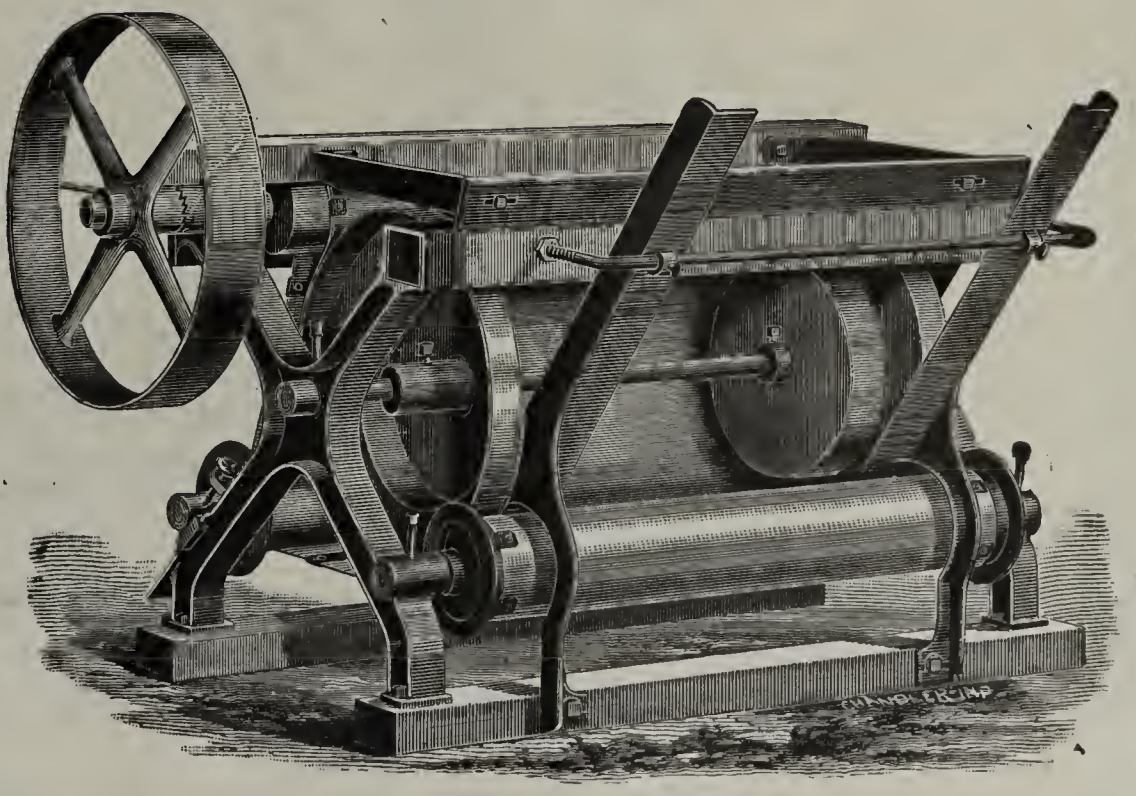
Strong and Durable,

Sands the Moulds Perfectly,

Never Strikes or gets Drunk,

Always Ready for Work,

No rick Machine Complete without this Machine.



Patented February 5, 1889.

We make a specialty of equipping Sand Mould plants complete. We are the largest manufacturers of this class of machinery in the world. Write for prices.

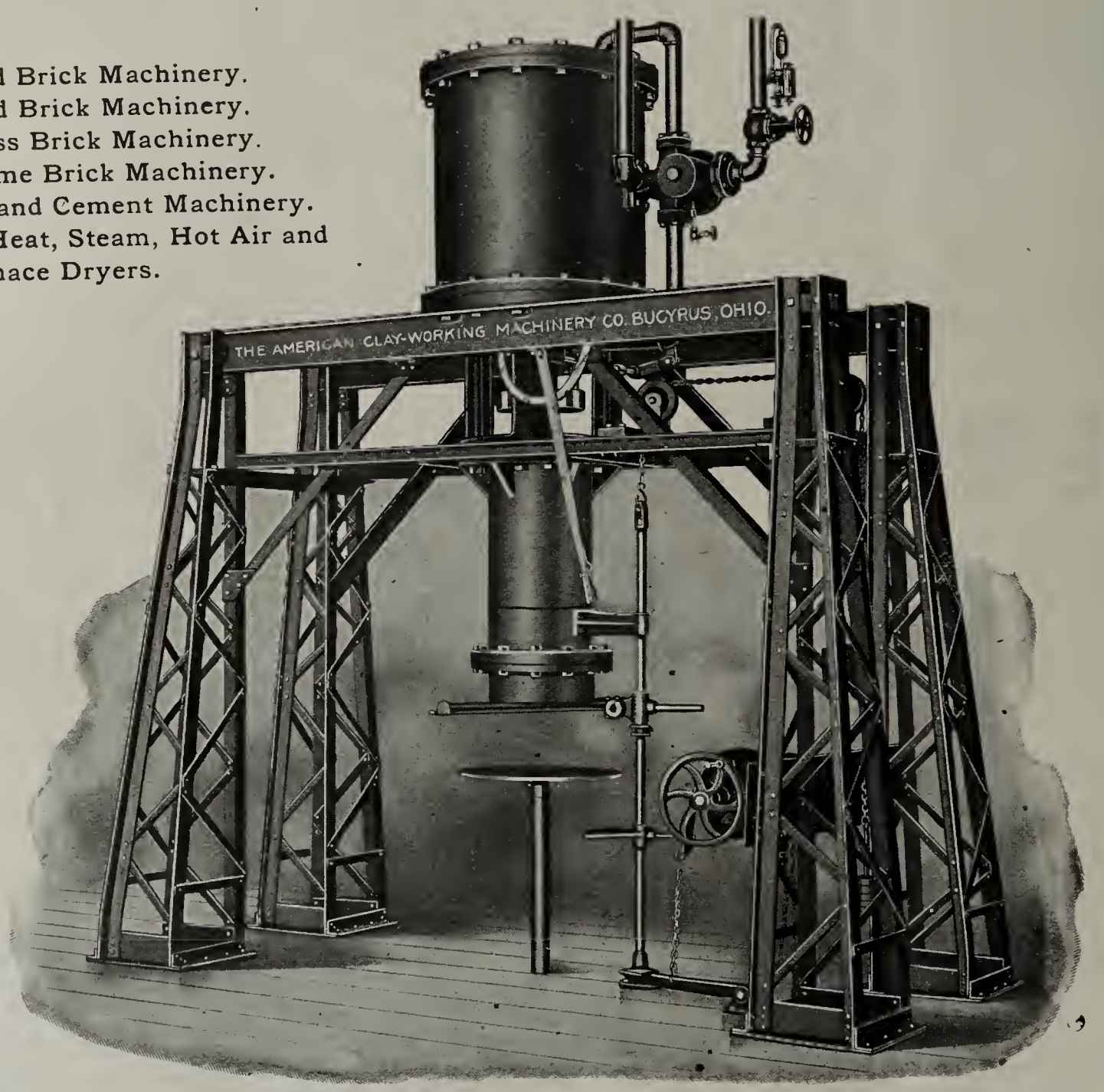
C. & A. POTTS & CO., Indianaoplis, Ind.

SEWER PIPE MACHINERY

Built Right Run Right

We build Complete Outfits for Sewer Pipe Plants. We have a line of presses that cannot be surpassed in economy of operation, convenience or capacity. All necessary appliances furnished. Send for Complete Catalogue. We build **everything** needed by the Clay Worker.

Soft Mud Brick Machinery.
Stiff Mud Brick Machinery.
Dry Press Brick Machinery.
Sand-Lime Brick Machinery.
Pottery and Cement Machinery.
Waste Heat, Steam, Hot Air and Furnace Dryers.



WE MAKE OUR OWN DRYERS AND CAN GUARANTEE THEM.

THE AMERICAN CLAY MACHINERY CO.

BUCYRUS, OHIO

Copyright, 1905, by Abbe Engineering Company.

THE above cut shows a Jumbo Pebble Mill recently shipped to one of the largest potteries in this country.

Size of 6'0" diameter x 8'0" long.

Pebble Mills for Glaze, Frit, Enamel, Glass, Feldspar, Flint, Colors, etc.

Eighteen different sizes carried in stock ready to ship all the time.

The only firm that has made improvements on these mills in the past ten years.

Write for our 80-page catalog today.

See our "Ad" next month.

ABBÈ ENGINEERING COMPANY
12th Floor --- 222 Broadway
NEW YORK CITY

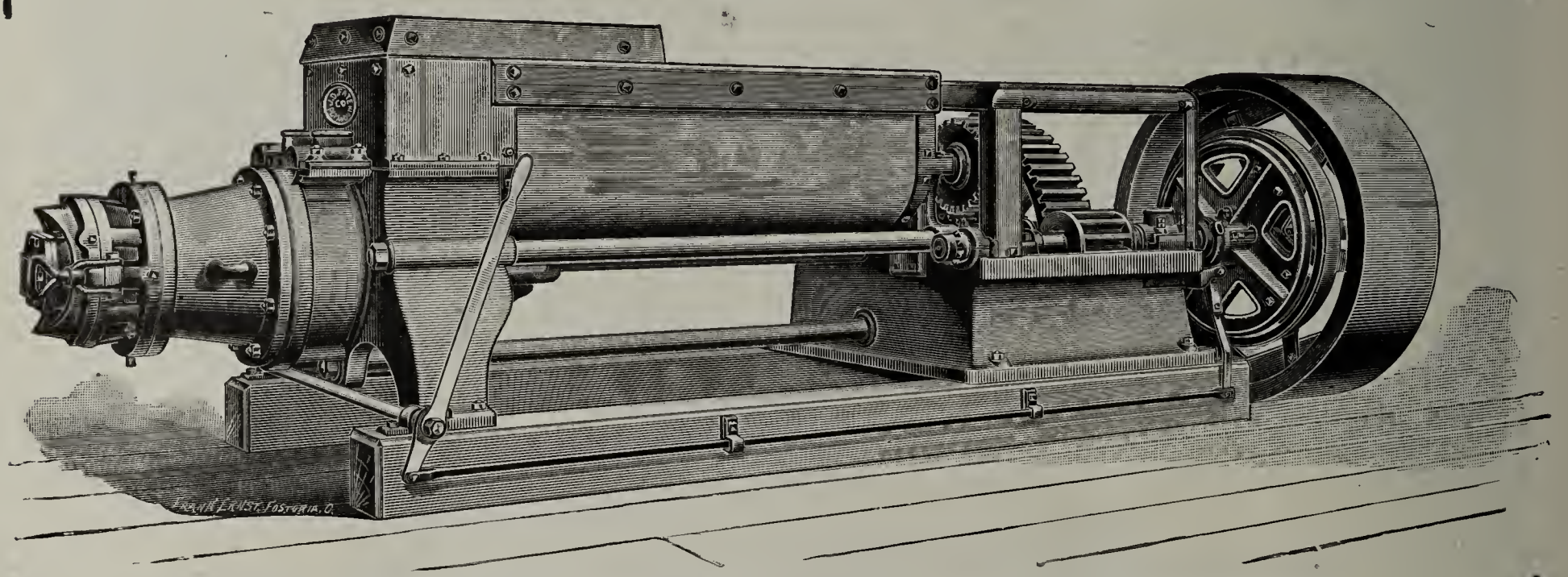
We have a complete testing labaratory at your service

THE "PREMIER"

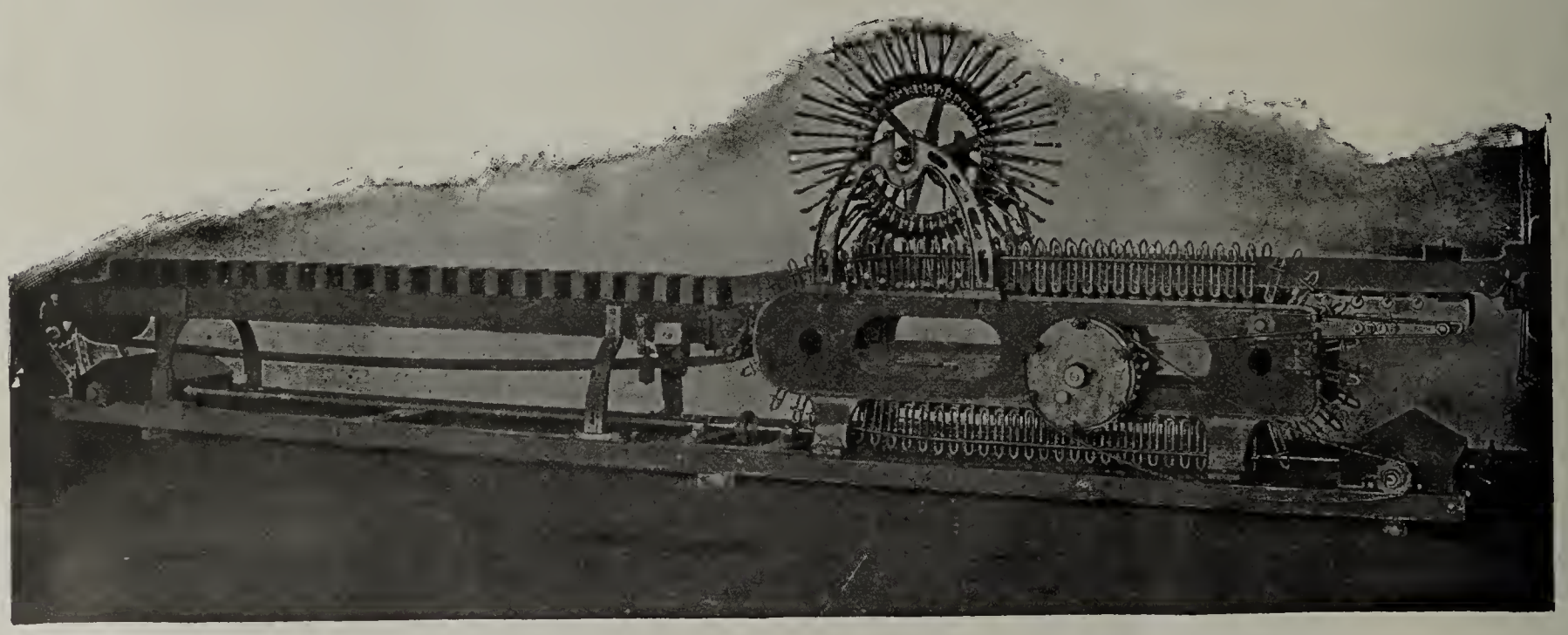
Combined Brick Machine

THE PREMIER LINE — THE J. D. FATE COMPANY

THE LARGEST LINE OF AUTOMATIC CUTTING TABLES IN THE WORLD



WITH BENSING'S AUTOMATIC SIDE-CUT BRICK TABLE.



Make a combination of Brick Machinery which is pronounced by practical brick makers to be the most perfect arrangement of stiff mud machinery now on the market.

It is unequaled for strength, durability, capacity and quality of ware produced.

Write us for catalog and full particulars of the "Premier" line of Clay Working Machinery.

THE J. D. FATE CO., = Plymouth, Ohio

WESTERN REPRESENTATIVES:

B. E. LA DOW, 701 Dwight Bldg., Kansas City, Mo.

Pacific Coast: LEW THORNE, Grand Hotel, San Francisco, Cal.

CLAY RECORD

Vol. XXVII. No. 11. CHICAGO, DECEMBER 16, 1905. Semi-Monthly, $1.00 per Year Single Copies, - 10 Cents

ECONOMICAL COMBUSTION.

So much is said and written concerning the wasteful way in which we burn coal that people who have not carefully investigated the subject are led to believe that if the average fireman should be a little more careful about admitting air to his furnace, and pay attention to a few other things, we should find our coal bills reduced about 75 per cent, says W. H. Wakeman in the Tradesman.

All this sounds well for the theorist who writes it and who ought to know better; but why does not some expert of this stamp spend a day or two in the boiler room of some steam plant and demonstrate what he can do?

He may value his services at $10.00 per day or more, but that need not hinder him, for, if he can do what some of his statements seem to imply, he should be paid at least five times that amount.

Let us drop all obscure terms and phrases and view this matter in a common sense way, in order that we may get at the true inwardness of the matter in hand.

As we are not referring to any particular case, we shall assume approximate figures for comparison. It is quite possible, under fair conditions, to evaporate ten pounds of water for each pound of coal burned in a boiler furnace, each pound of which represents 1,100 heat units, or 11,000 per pound of coal.

How many heat units are there in a pound of coal? Of course, we all know that all coal is not alike; therefore, some of it gives off much more heat than we can get out of other specimens. It is a very good specimen that will yield 14,500 heat units per pound, and it is only fair to assume that much that is delivered to our boiler rooms does not contain more than 13,500.

If this is the total amount that can be gotten out of it under laboratory conditions, and we actually do get 11,000 in our everyday work, what per cent goes to waste? Evidently we use 11,000÷13,500=81½ per cent nearly, showing that 100—81½=18½ per cent is lost somewhere.

Now, this 18½ per cent is worth saving. There is no doubt about that, for, even if one-third of it can be saved, it will mean several thousand dollars per year to some corporations; but at the same time it does not prove that our firemen are throwing away more than one-half of the coal we buy for them. It is all very well for some theoretical writer to demonstrate to his own satisfaction that if a pound of carbon is completely burned it will produce 14,500 heat units; also to inform us that if imperfectly burned it yields but 4,400 heat units. Some of these writers plainly intimate, if they do not say so in as many words, that we burn our coal in many cases with the latter result. Let us see if this is probable.

As above explained, we can utilize 81½ per cent of the heat produced; therefore 81½ per cent of 4,400 is 3,586. If it takes 1,100 heat units to evaporate one pound of water, how many pounds will 3,586 evaporate? Only a little more than three pounds evidently. Yet, where can a plant be found that only produces a fraction more than three pounds of steam for each pound of coal burned?

This article is not intended as a defense of those who are not securing the best possible results, as it is a part of our business to urge all engineers and firemen to do their best work, feeling sure that they will be paid accordingly; but, when matters are represented so much worse than they really are, it tends to discourage men, and there is enough of this for them to contend with already without our adding to the list.

Some reader is sure to wonder where this 18½ per cent goes to, as it seems to be entirely lost beyond hope of recovery, and this we will explain.

In order to keep a fire burning everybody knows that it must have air. But why is this true? Air contains oxygen, and this is what is called a "supporter of combustion." In other words, we must have this oxygen, or else our fire will go out and leave us "in the lurch."

Air must be used for many things in addition to keeping our fires burning; therefore it must contain something besides oxygen. The other ingredient is nitrogen; but this

does not help our fire, yet we must take it along with what we need because we cannot separate them readily.

We want only about three pounds of oxygen to burn a pound of coal, but, in order to get this, we must take at least twelve pounds of air, even under the best conditions; but these never exist in our boiler rooms, owing to conditions that we cannot control. This means that when air goes into our ash pits, strikes the grate bars and goes up through the ashes and clinkers that are sure to be there except when we have just built a new fire, or cleaned an old one, the little particles of oxygen do not all go just where they should to properly combine with the heat already there; consequently, some of them are lost.

To make this loss good it becomes necessary to admit more air. This gives us the required oxygen, but at the same time it brings in more of the nitrogen, which we do not want, and some of the heat is used in warming this useless gas. This accounts for some of the loss of heat units.

We all know that a boiler room is a very hot place unless it is thoroughly ventilated, in which case it simply means that the heat is sent off somewhere into the outer air. This fact should make it plain that some of the heat contained in the coal is lost in heating the boiler room, and, so far as we are informed, there is no way to prevent this loss. In some places it is customary to restrict ventilation, keeping doors and windows closed in order to save this heat; but such a course is not recommended, because it brings unnecessary hardship on the fireman. From a disinterested point of view men are worth more than coal, but the point of view seems to make a difference.

Smoke and gases going up a boiler chimney are always hot, and here is where some of the wasted heat goes to.

The term "wasted heat" is used because it is a common way of expressing the matter, rather than on account of its truth. It is necessary to create draft in a boiler chimney; therefore, the more common way is to heat the air in it, thus making it lighter than the outside air. Consequently, it will rush upward and draw other air after it. It takes some heat to do this, but how are we to avoid it? If we use a fan for this purpose it takes power, and there is the necessary machinery to take care of; so that we cannot escape paying for the draft we need in some way.

This view of the case shows us that the heat which goes up the chimney is not lost, but does useful work instead.

A fair consideration of all these details shows that much of the 18½ per cent of the coal above mentioned cannot be reclaimed, nor turned to any other purpose until new discoveries along this line shall revolutionize our present system of steam making.

Still, we know that the steam plant taken as a whole is a wasteful affair; therefore, our investigation must be carried further if we are to solve the problem. Our attention must now be turned to the steam engine, which is worthy of separate consideration; therefore, it is given a distinct heading, and we will proceed to contemplate

A test that we made some time ago showed that it required a small fraction more than three pounds of coal to develop one horsepower for one hour in a simple Corliss engine running non-condensing. We have assumed that a pound of common coal contains 13,500 heat units, 11,000 of which goes into the steam we generate with it. When we have burned three pounds in an hour we have put 33,000 heat units into steam used to develop one horsepower for that time.

Now, one horsepower is equal to 33,000 foot pounds per minute, and one heat unit is equal to 778 foot pounds; therefore, one horsepower is the same as $33{,}000 \div 778 = 42.4$ heat units, or $42.4 \times 60 = 2{,}544$ per hour.

We now have a very simple problem before us, as follows:

We use coal enough to equal 33,000 heat units per hour, while the power we develop with it is equal to 2,544 heat units. What per cent of the heat put into steam is actually turned into power? $2{,}544 \div 33{,}000 = .077$, or 7.7 per cent. As this is only an approximate calculation we may call it 8 per cent. What becomes of the other 92 per cent, and when we have accounted for it shall we not have found out what makes the steam plant wasteful?

As soon as steam commences its journey from the boiler to the engine it begins to lose heat. During the process of expansion more of it is condensed in the cylinder. These two items may account for 17 per cent of it, leaving 75 per cent to go out in the exhaust steam, therefore by far the greater item of loss is found in the steam which we see blowing out of numerous exhaust pipes every day.

Our reasons for the above division of 100 per cent which represents the whole, into 8, 17 and 75, are as follows: Numerous reports of tests made to determine the efficiency of steam engines show that on an average about 75 per cent of the feed water is accounted for at the end of the stroke in the cylinders. As we have shown that about 8 per cent disappears in doing work, it leaves 17 for loss by radiation and condensation.

To sum up the calculation then, we find that 81⅛ per cent of the heat in coal goes into steam. About 8 per cent of this is actually used in doing work, therefore when we burn a ton of coal under a steam boiler only $8\frac{1}{2} \times 8 = 6\frac{1}{2}$ per cent is actually used in doing work in a simple non-condensing engine and it is only fair to call this a very wasteful condition of affairs.

To those readers who think that nearly all the heat put into a gas engine is turned into useful work, we would say that the losses here are very great, although less than in the steam engine. The electric motor cannot be considered in this connection because it is not a prime mover at all, but is only a means of transmitting power that is generated in some other way.

Having pointed out these losses let us consider briefly remedies whereby some of them may be made less.

Special care in keeping fires clean and free from holes whereby an excessive amount of air goes through the grates will help the matter some.

The radiation of heat from steam pipes can be reduced by using a first class steam pipe covering. To get best results it is necessary to cover all flanges and bodies of valves.

Condensation in steam cylinders may be reduced by covering them with non-conductors of heat, including steam chests, cylinder heads, etc. Jackets will keep cylinders warm, but the condensation then takes place in the jackets, therefore they are not included in this list of remedies.

Loss of heat in exhaust steam can be made less by expanding it to a lower pressure before it leaves the engine, thus getting more power out of it. To do this effectually calls for more than one cylinder, so that great changes of temperature will not take place. In other words a compound engine may be substituted for a simple one with good effect.

It is not good policy to expand steam below atmospheric pressure in a non-condensing engine, but if a condenser is added, it may be expanded 3 pounds absolute pressure, or say 12 pounds below the atmosphere. This will increase the cylinder condensation, but pays because it extracts more work out of the steam before it goes to the condenser. In this case the exhaust is still in evidence although it cannot be seen. It must be considered as it leaves the last cylinder for the condenser.

When all of the above mentioned losses have been reduced as low as possible, about 20 per cent of the value of coal burned appears as power developed.

THE NEW PLANT OF THE EGG HARBOR BRICK COMPANY.

The cut shows the plant of the Egg Harbor Brick Mfg. Co., at Egg Harbor City, New Jersey, (near Atlantic City.) The attention is at once drawn to the unusual division of a plant by the railroad track as shown, but along in the text it will be noted the track proves no obstacle as certain novel and modern devices get around it. The machinery house stands at the left where the stiff mud brick are made, and in this connection would say this company takes their raw clay and make it into wire cut brick. The machine is one of the Henry Martin Brick Machine Mfg. Co.'s brick machines built at Lancaster, Pa.

To the right hand of the railroad track will be seen the "Martin" Steam Brick Dryers for drying stiff mud brick. In this case, as the railroad siding cuts through the plant between the machinery building and the "Martin" Dryers, the endless belt conveyors which convey the stiff mud brick direct from the automatic cut-off table through the entire length of the "Martin" Steam Brick Dryers are put in sections for convenience in spanning the railroad tracks, with a total length of about 185 feet. This arrangement works in a most satisfactory manner, the brick being handled economically, and dried in the Martin Dryers in less than ten hours, in fact we are advised that in the plant above referred to some runs have been made within six and seven hours. We have already said the brick are taken from the machine automatically through these dryers and during the progress of the same are hacked on the steel pallets, ten brick on each pallet. The brick made one day are all set in the kiln the following morning.

Plant of the Egg Harbor Brick Mfg. Co., Egg Harbor City, N. J.

A similar plant is being put up at the yard of the Raritan Brick Co., Matawen, New Jersey, and two similar were recently installed for the Gettysburg Brick Co., Gettysburg, Pa.

The Egg Harbor plant is close to Atlantic City, and is also within a very short ride from Philadelphia, and being one of the neatest and most economical stiff mud plants that can be seen in operation in New Jersey, our readers if happening in that "bailiwick" would do well to see it.

The officers of the company are Louis Garnich, president; Geo. A. Grott, vice-president; Dr. Myrtile Frank, secretary, and Christian Atz, treasurer.

Think three times before you speak and the chances are you will decide it is best to keep your mouth shut.

THE BERG SYSTEM FORGING AHEAD IN CANADA.

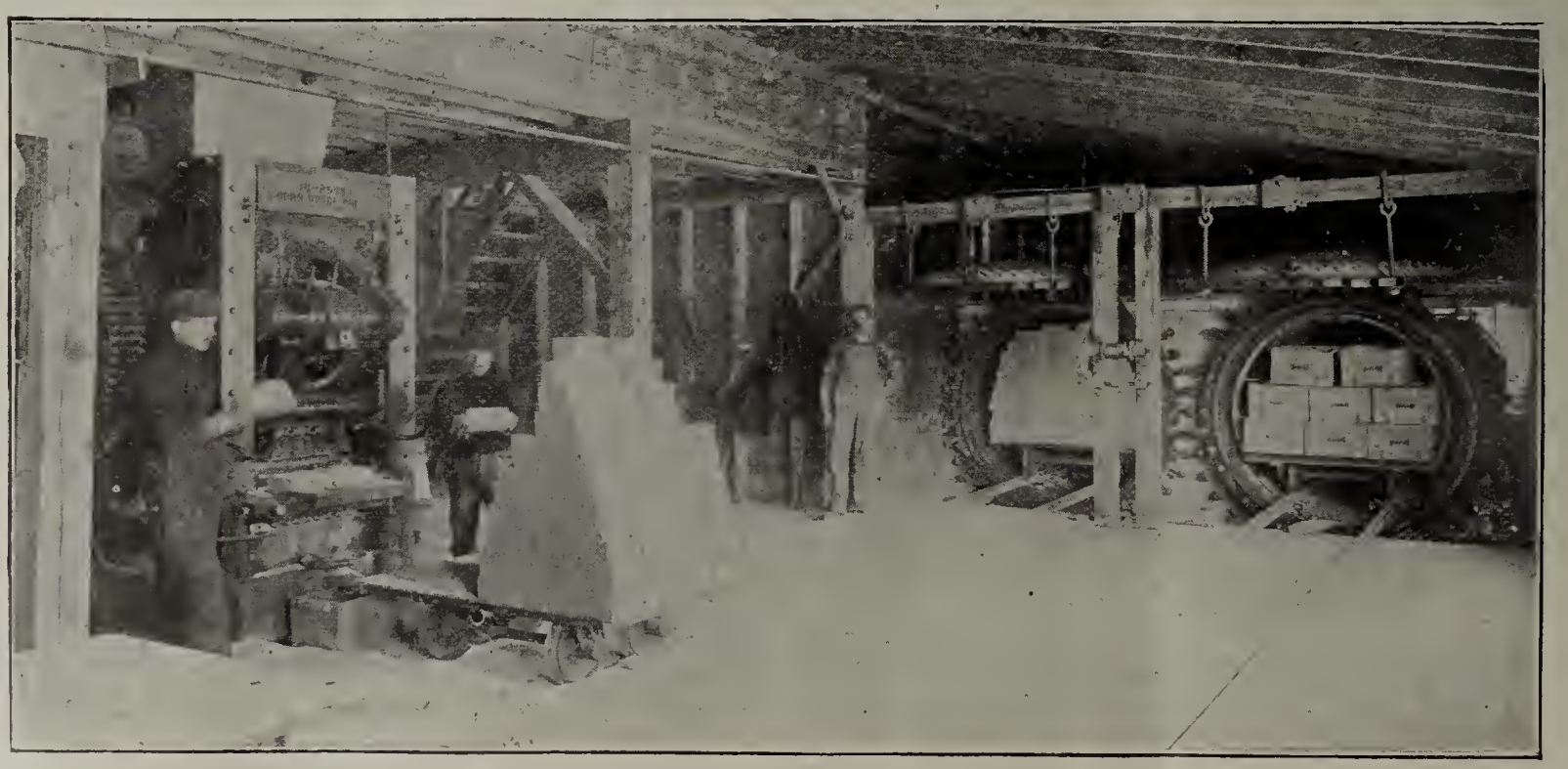
The cuts here shown are of the exterior and interior views of an important brick plant recently installed in Beausejour, Manitoba, the plant of the Manitoba Pressed Brick Co. The Northwest have taken hold vigorously of the sand-lime brick making, and many interesting plants have been and are being installed.

This plant is called a two-cylinder plant and the cut giving the interior view plainly shows the reason. To the left may be seen the brick making machine, known as the "Berg" machine, and as the brick are made are stacked on a car and when fully loaded car is run into the cylinder for drying.

A description of the plant will be interesting. It is composed of a Berg brick making machine, working with precision, exerting great pressure on each brick.

The lime is first slacked in boxes weighing fifty pounds each. Looking at the right hand cylinder will be observed these pans or boxes on a car, the contents being hydrated and made a separate operation of, in the cylinder, and in the cut showing the plant standing alongside the lime house in the foreground is seen a car loaded with lime in boxes ready for treatment as has been described above. This separation differentiates the Berg from the other methods; these latter allowing the lime to be hydrated at the same time the brick are subjected to the vapors in the cylinder, both processes going on at the same time. In the Berg method the lime

Manitoba Pressed Brick Co., Beausejour, Manitoba.



Interior View of a Two-Cylinder Brick Plant.

is already prepared, then fed into a mixer along with the sand into a bin, from which it is carried by another belt to the mixer. After passing the measuring room, where both the lime and sand are measured with precision, the materials pass down a shaft into the Berg press which forms the brick. The work of the press is regular and effective, and its product loaded on cars later to go into the cylinders shown in the cut, there to be hardened by being subjected to an average steam pressure of one hundred and twenty-five pounds, this being effective and producing the desired effects. The cut showing the exterior view presents a plain view of the plant, simple as one could wish in its arrangement, the material entering at one end in raw condition leaving at the other end finished product.

Hon. Anton Berg, Toronto, Ontario.

We should say a word regarding the Berg machine. When the United States government issued the patent it was pronounced the highest development of the art of making brick, entirely original in movement.

The business of manufacturing is carried on by A. Berg & Sons, whose offices are located in the Manning Chambers, Toronto, Ontario, and includes not alone the dry pressing machine above referred to but also Berg measuring devices, crushers, conveyors, and the Berg mixer, indicating a wide scope of inventive skill on the part of Anton Berg, the senior member of the firm, who is well and favorably known to the manufacturers of brick making machinery in the United States and Canada.

The officers of the company are Angus Browne, chairman; J. E. Fairchild, vice-president; Wm. Findlay, secretary and treasurer, and George H. Bradley, general manager. The stockholders are the above and D. G. Connery, D. A. Ross, J. B. Mitchell, Charles Browne, K. S. Johnson, W. Wright, Samuel Harper and T. H. Johnson, all of whom are loud in their praise of the article manufactured.

The plant is located about a quarter of a mile south of the Beausejour station and is admirably placed for doing good work. The brick are made under what is known as the "Berg Process."

POST PIPE COMPANY IN TEXARKANA.

After several months of preliminary work, locating deposits of clay and experimenting to ascertain its properties, all of which has now been determined satisfactorily, it has been decided by the principal stockholders of the Blackmer & Post Pipe Co. of St. Louis, to organize the "Post Pipe Co." under the laws of the State of Texas, with a capital of $125,000, fully paid, and to build, equip and operate a Sewer Pipe. The raw material, which an extended series of experiments has demonstrated to be of superior quality and especially adapted to the manufacture of vitrified clay products, particularly sewer pipe, will be taken from the company's own property about four miles from Texarkana, Texas, adjacent to the Iron Mountain railroad. The factory will be located on 7½ acres of ground in the western part of the city, and will be directly connected by switches with the Texas & Pacific, Iron Mountain, Kansas City Southern and the Cotton Belt railroads, thus giving unusual facilities for distribution of the product of the plant.

The improvements to be erected will be a main factory building of brick, 80x252, 3-stories, with brick annex 40x100 feet for engine, boilers and heavy clay-grinding machinery, and eight 32-foot down-draft kilns of the most approved construction. The arrangement and equipment of the plant will evidence the latest improvements in clay-working lines. The fuel to be used will be oil, which, at Texarkana, combines simplicity of operation, certainty of good results, and minimum cost. About $110,000 will be expended in the purchase of ground and in construction and equipment of the plant.

The officers of the "Post Pipe Co." will be L. W. Post, president; L. R. Blackmer, vice-president; J. J. Wallace, second vice-president; G. R. Payne, secretary and treasurer, and M. P. Post, superintendent. While this company will be owned and controlled by the principal owners and officers of the St. Louis company its operation and management will be entirely independent.

It is the intention of Mr. L. W. Post to take up his residence in Texarkana, and to give his personal attention to the construction and equipment of the plant, and to the operation of the company's business.

About sixty men will be given permanent employment at the factory and office. It is expected that the plant will be in full operation about April 1, 1906.

CHRISTMAS HOLIDAY EXCURSION RATES

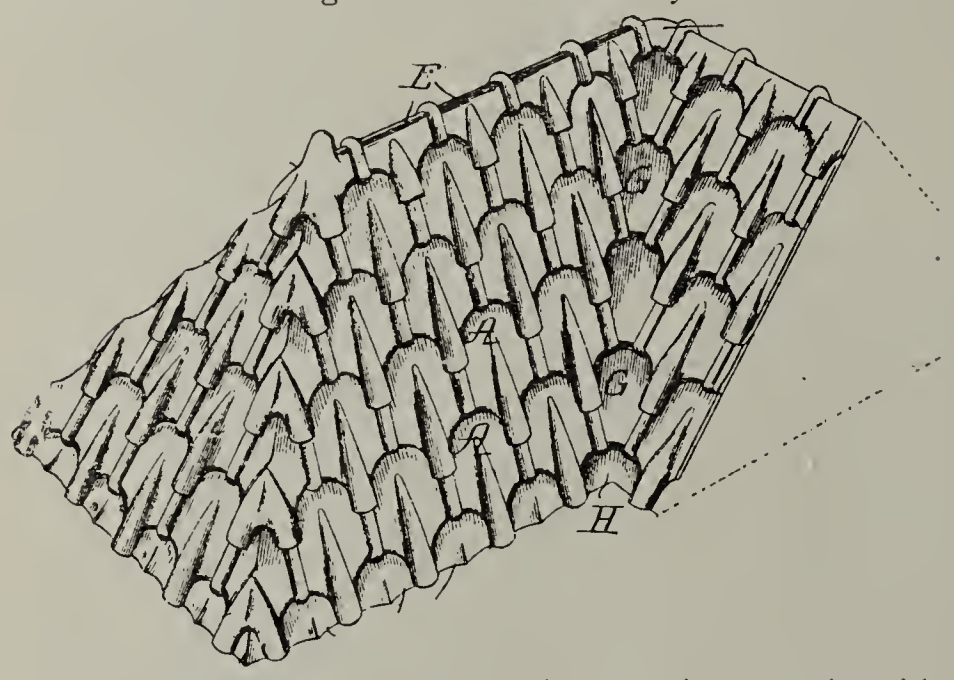
Via the Nickel Plate Road, between Chicago and Buffalo. Dates of sale, December 23, 24, 25, 30 and 31, 1905, and January 1, 1906, at a fare and a third for the round trip, with return limit of January 3, 1906. Through train service to New York City, Boston and other Eastern points. No excess fare. Individual Club Meals served in Nickel Plate dining cars. Three through trains daily from La Salle and Van Buren Street Station, the only depot in Chicago on the Elevated Loop.

NEW INVENTIONS THAT ARE OF INTEREST TO THE CLAY MANUFACTURER.

These new inventions are those that are especially of interest to any one engaged in the line of building materials and their manufacture, or machinery to make them.

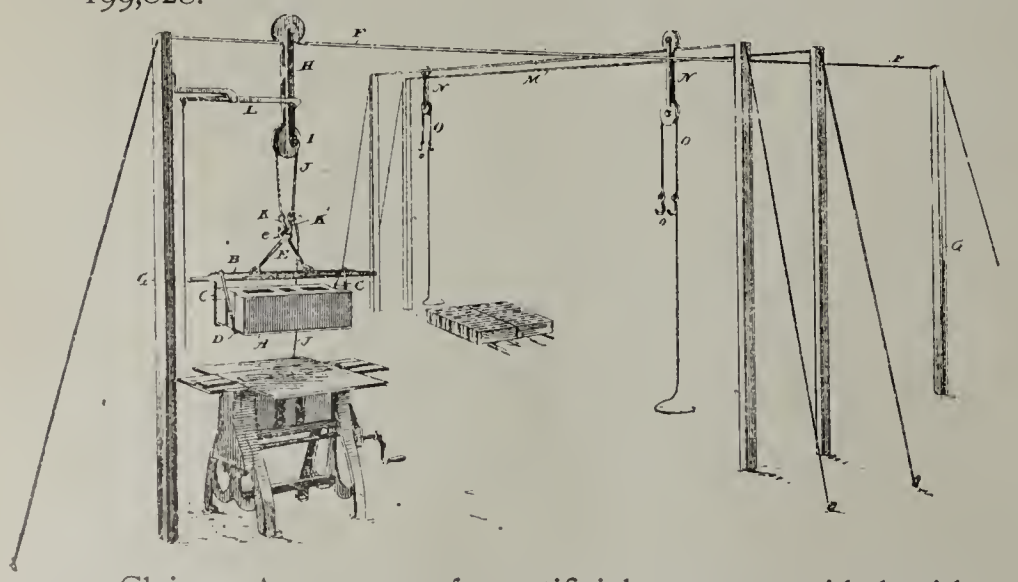
803,524. Roofing-Tile and Tile Roof. Ludwig J. W. Birn, Chicago, Ill. Filed Oct. 3, 1904. Serial No. 227,011.

Claim.—A roof comprising a roof structure, a plurality of tiles supported thereon, each of said tiles being provided at one lateral margin with a rearwardly-idirected hook-



flange, and on the outer face of its opposing margin with a rib which is connected by a transversely-curved rib on the outer face if its upper end with the said hook-flange, the side ribs and flanges of each tile being interlocked with the ribs and flanges of adjacent tiles of the same course, the tiles of each course being laid with their lower ends over the upper ends of the tiles of the next lower course, said tiles of each course being located between and above the tiles of a next lower course, and provided on their lower ends with concave noses which have curved side margins and project centrally from said ends and overlap the interlocking connections between adjacent tiles of such lower course, and flanges on the curved sides of the noses which engage the transversely-curved ribs of the tiles of the next lower course.

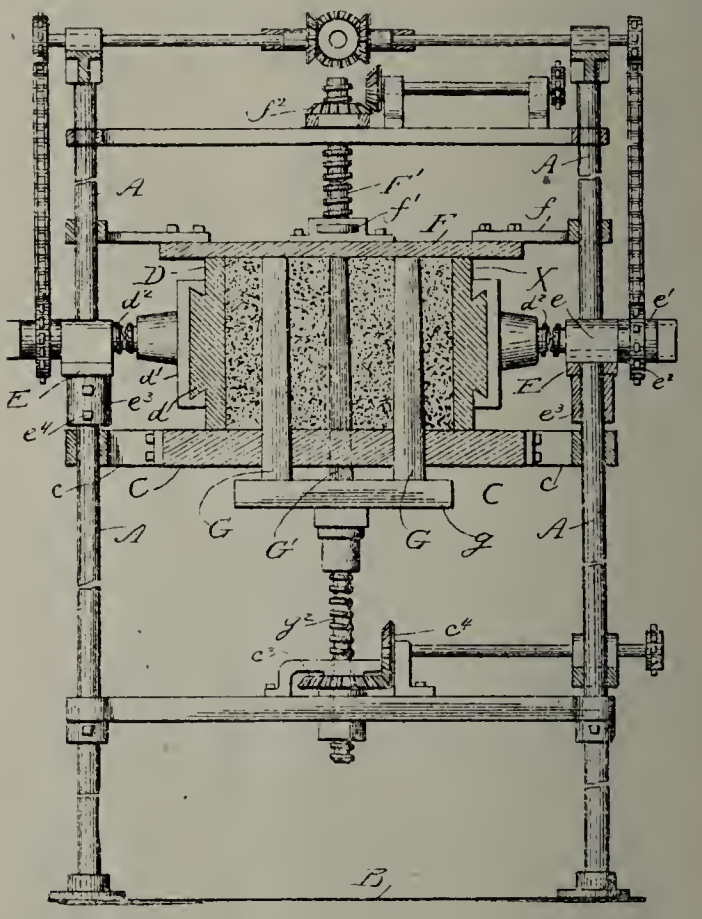
803,016. Conveyer for Artificial Stone. Floyd Palmer, Washington, D. C. Filed March 24, 1904. Serial No. 199,828.



Claim.—A conveyer for artificial stone, provided with a carriage, a hand-bar suspended from the carriage, rods depending from the hand-bar, and means on said rods for engaging and supporting a stone-holding plate.

In a conveyer for artificial stone, the combination of an elevated track or rail, a carriage, and stone-supporting means suspended from said carriage comprising a hand-bar, rods depending from the hand-bar, and means on said rods for engaging and supporting a stone-holding plate.

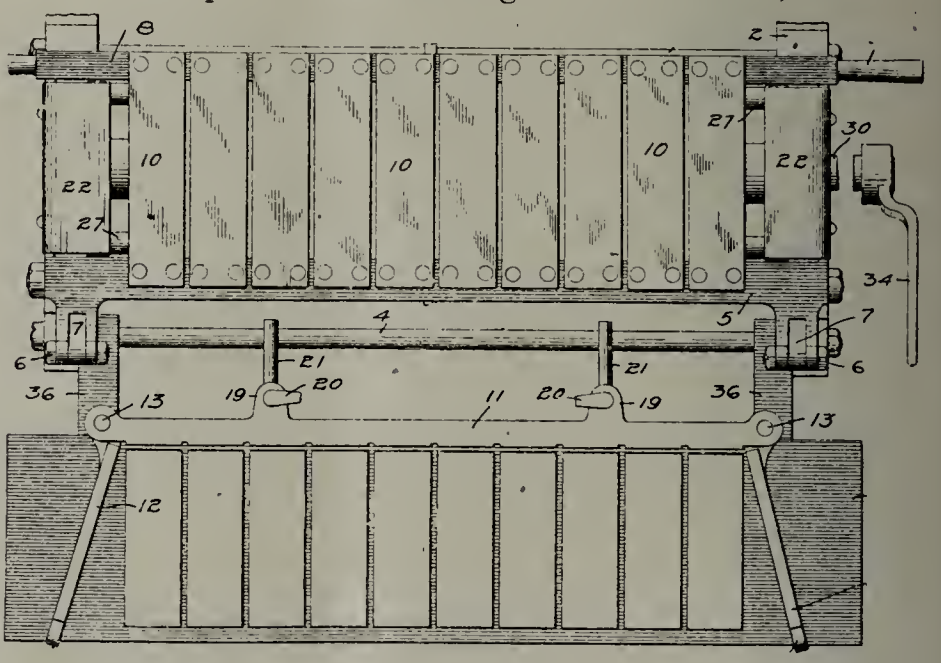
803,092. Machine for Making Artificial Stone. Valentin Bueckermann, Chicago, Ill. Filed Sept. 24, 1904.



Claim.—A block-press comprising a base, standards rising therefrom, a bottom plate and a top plate both of which have corner extensions which are slidably mounted on the standards, means for operating the plates, a frame supported on the standards and having bearing-blocks, screws side and end plates mounted in the brackets, and means for actuating the screws to advance and retract the side and end plates.

804,169. Mold for Building-Brick. William Porten, St. Paul, Minn. Filed July 17, 1905. Serial No. 270,005.

Claim.—The combination, with a frame, of a mold hinged thereon at one side and adapted to be swung on its hinges to an inverted position, and having suitable handles, means

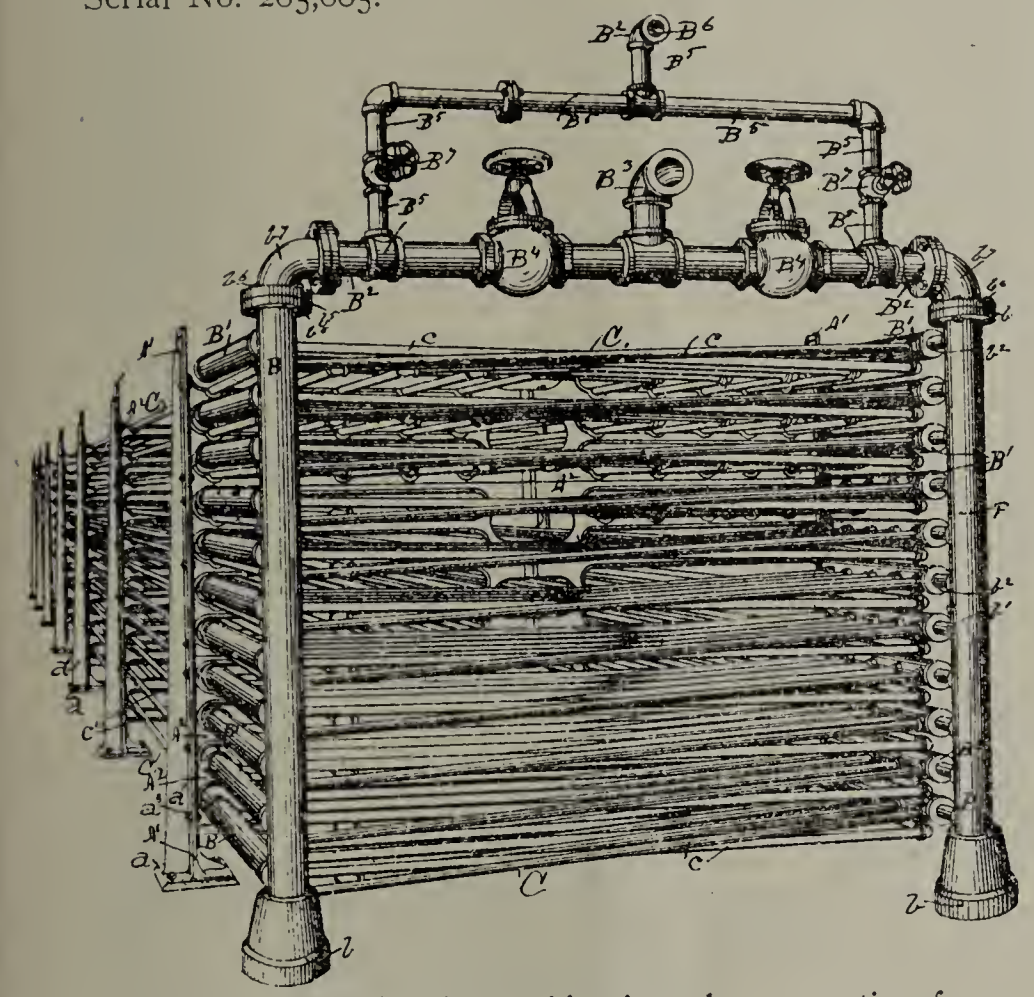


for supporting said mold in its inverted position, said mold having a floor composed of a series of smooth-surfaced plates spaced apart, and partitions separating said plates one from another, said partitions being movable from between the plates to permit the mold to be swung on its hinges, substantially as described.

A concrete-brick mold hinged on one side and having a floor composed of a series of smooth-surfaced metal plates arranged parallel with one another and with spaces between

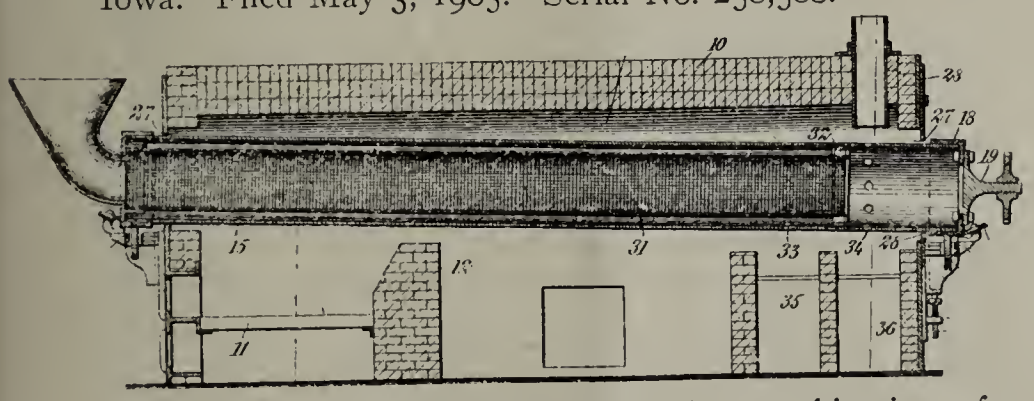
them, partitions movable between said plates, and away therefrom to permit the mold to be swung to an inverted position, and a pallet adapted to be placed over said mold to form the bottom of the same when it is inverted substantially as described.

804,489. Brick-Drier. William R. Martin, West Hempfield township, Lancaster county, Pa. Filed June 16, 1905. Serial No. 265,605.



Claim.—In a drier, in combination, the supporting-frame A composed of the metallic posts A having the base-plates a and the vertical strengthening-ribs a with the plain vertical inner surfaces, and the bracket-plates A having at the extremities of their centers the side flanges a with the headed bolts and nuts a securing them together, and at the extremities of their outer ends the flanges a in engagement with said plain surfaces and the headed bolts a there-through with nuts on their outer ends to secure them together, said plates having at their centers the oval orifices a and in their bodies on the sides of said orifices the oblong apertures a, said apertures surrounded by the strengthening-ribs a with the semicircular recesses a in their lower edges, all substantially as described and for the purpose hereinbefore set forth.

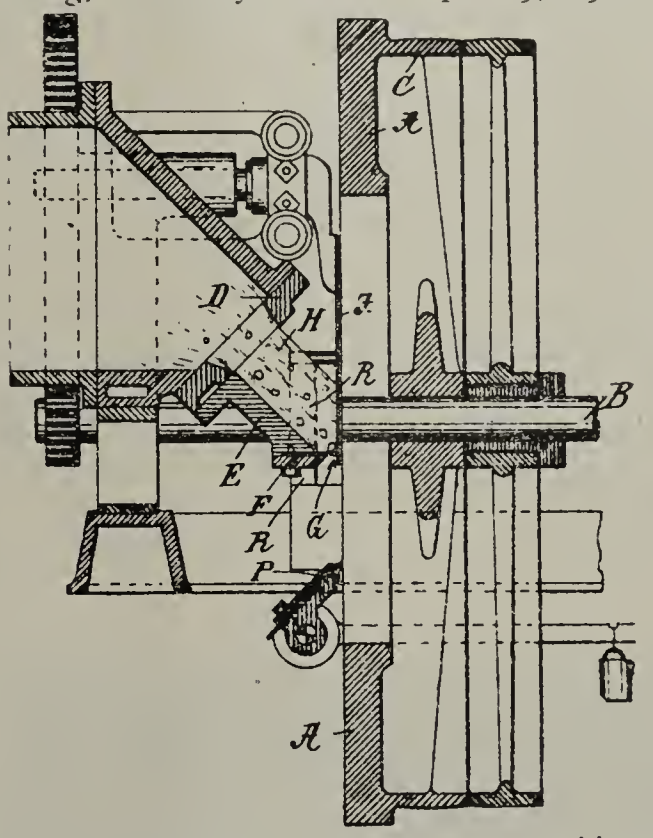
804,607. Sand-Drier. William King, Cedar Rapids, Iowa. Filed May 3, 1905. Serial No. 258,588.



Claim.—In a drying apparatus, the combination of a furnace with a rotatable casing, said furnace being provided with roller-bearings for the casing, the bearings at one end of the casing being vertically adjustable, and the furnace being provided with an opening having adjustable plates for partially closing it.

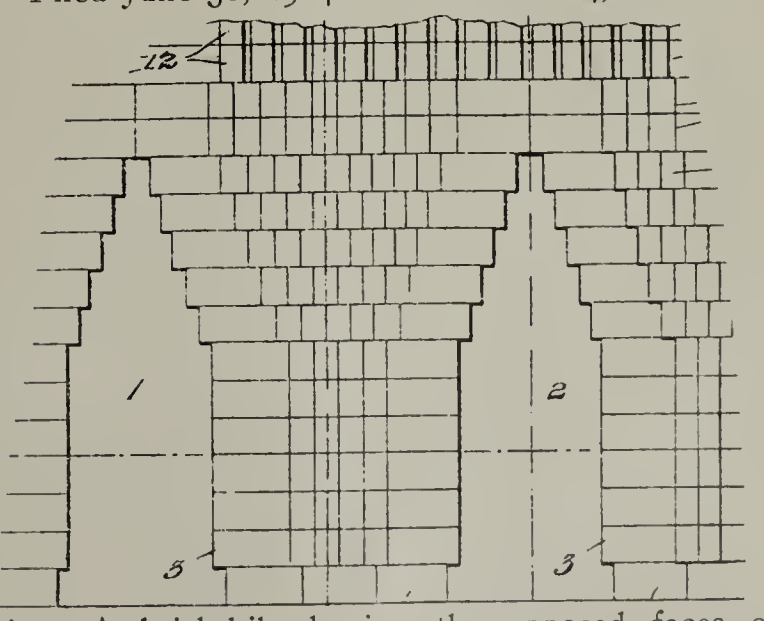
In a drying apparatus, the combination of a horizontal furnace having a grate at one end and a discharge-outlet at the other, and openings in its opposite ends, with a rotatable casing extending through the furnace from end to end in an inclined position and projecting through said openings; said casing being provided with means for rotating it upon one end, and said furnace being provided with roller-bearings for the ends of the casing, the bearings at one end of the casing being vertically adjustable, and one of the openings in the furnace being provided with plates for partially closing it, and having a passage for the cylinder, said plates being adjustable.

803,563. Clay-Cleaning Device. Herman Diesener, Charlottenburg, Germany. Filed Sept. 19, 1902.



Claim.—In a clay-cleaning device, the combination of a rotary disk, a support for a column of clay adjacent the face of said disk and forming therewith a slit, a reciprocating clearing device traversing said slit, a lower support at each end of said slit and forming a lateral continuation of the bottom wall thereof, and a movable wall forming with said support a receptacle for matter removed from the clay by said clearing device and adapted to be forced outward by the pressure of such matter.

804,294. Brick-Kiln. Edwin D. Young, Oklahoma, Okla. Filed June 30, 1904. Serial No. 214,801.



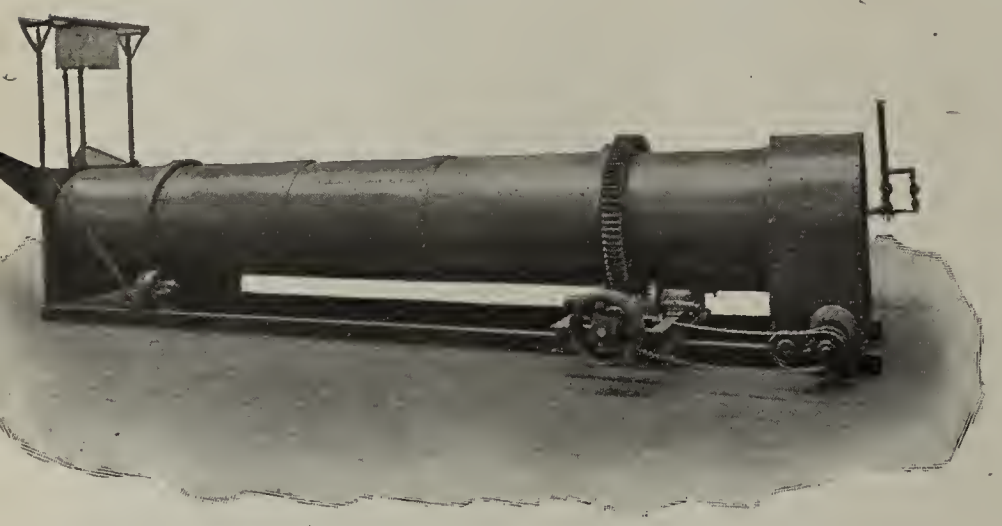
Claim.—A brick-kiln having the opposed faces of its arch-springs provided with tortuous flues and having supports spaced apart to present heat-inlets, the filling between the arches being provided with continuous straight vertical flues, and benches having flues breaking joint with those of the arch-springs and filling.

THE AMERICAN HYDRATOR.

The accompanying illustration is presented, as it is of timely interest in connection with improved ways and means of hydrating. It shows the American Hydrator, a machine which is simply and strongly built of steel, and, as there is little to get out of order about it, the cost for repairs is slight. It is in appearance somewhat like a rotary kiln, or dryer, and consists of a steel cylinder, encircled by tracks, revolving on rollers beneath.

At the end of the cylinder is a stationary plate, against which the cylinder revolves, and through this plate there is a chute, by means of which the quicklime is fed to the machine.

Within the chute is a hinged door, working inwardly, which is opened only momentarily by the weight of each charge of lime as it passes down the chute, so that it normally remains closed to exclude the air. The door has a lever attached to it, and whenever it is opened the lever is depressed. This lever is connected by cord or chain to the lever of a flush tank located above, and from which there is a pipe leading into the revolving cylinder and terminating in a spray attachment.



The American Hydrator.

The valve of the flush tank is arranged to close when the tank contains a quantity of water sufficient to chemically satisfy or hydrate a given weight of lime, usually a wheelbarrow full.

It will be seen that when a charge of lime is dumped into the chute the door will swing open, flush the tank holding the desired quantity of water, and as soon as the lime reaches the revolving cylinder and is being tumbled about therein it is sprayed by the released water, which it really absorbs.

The entire machine is set at an incline, so that as it revolves the material contained in it advances toward the lower or discharge end.

The moistened lime soon commingles, and the finer particles pass over a ring out of reach of the spray, where they begin to slake and break up, and, as they expand, they increase in bulk and lose in weight. This characteristic is made use of to automatically separate the hydrated particles from the heavier, unslaked particles. By means of a series of rings encircling the cylinder within the lighter particles rise to the top of the moving lime as the cylinder revolves and pass over these rings in succession until finally they reach the screen, of any desired mesh, through which the fine powder readily passes to the outer cylinder, leaving all coarser or foreign particles to be rejected. The product, which is now thoroughly hydrated, is discharged into a spiral conveyor, which delivers it to an elevator to be transferred to the bin, packer or mixer, as desired.

The screen, which separates the product, extends further than the encasing cylinder and discharges beyond a partition in the stationary hood, which closes the lower end of the machine. The finished product is discharged on the other side of this partition, and thus it is evident that any impurities or foreign particles (such as unconverted stone, ashes or pieces of firebrick, or anything that will not slake and pass through this screen) is thus automatically separated and rejected.

There is an inclined perforated steam pipe, which enters the lower end of the hydrator and extends through the axis, which supplies steam to the interior, prevents the entrance of air, and accelerates the hydration.

The machine is self-contained and rests upon a single framework, so that the inclination may be changed at will without disarranging any of its parts.

The American Hydrator is manufactured by the American Hydrating Company, main office at 1315 Continental Building, Baltimore, Md. This company will send to inquirers a booklet giving further details.

KANSAS CITY'S NEW INDUSTRY PUTTING 200 MEN TO WORK THIS WEEK.

The Kansas City (Mo.) Portland Cement Company recently organized in this city by some of the most prominent business men in this section, including F. A. Wear, W. A. Rule and W. H. Cafferty. The latter, who is general manager of the new company, informed the writer that the coming week will see 200 men at work on the new plant. Work is to be pushed as rapidly as possible. This company seems to have located a veritable Solomon's mine owing to the value and purity of the material at hand, the ease and access with which it can be manufactured and their close proximity to a market that can handle the entire output. Mr. Cafferty says the stock in the company is nearly all subscribed for and taken and that but a few days remain in which to secure what is left. The Kansas City Portland Cement Company promises to be one of the greatest industries in the country.

A FINE YEAR FOR BRICK AT COLUMBUS.

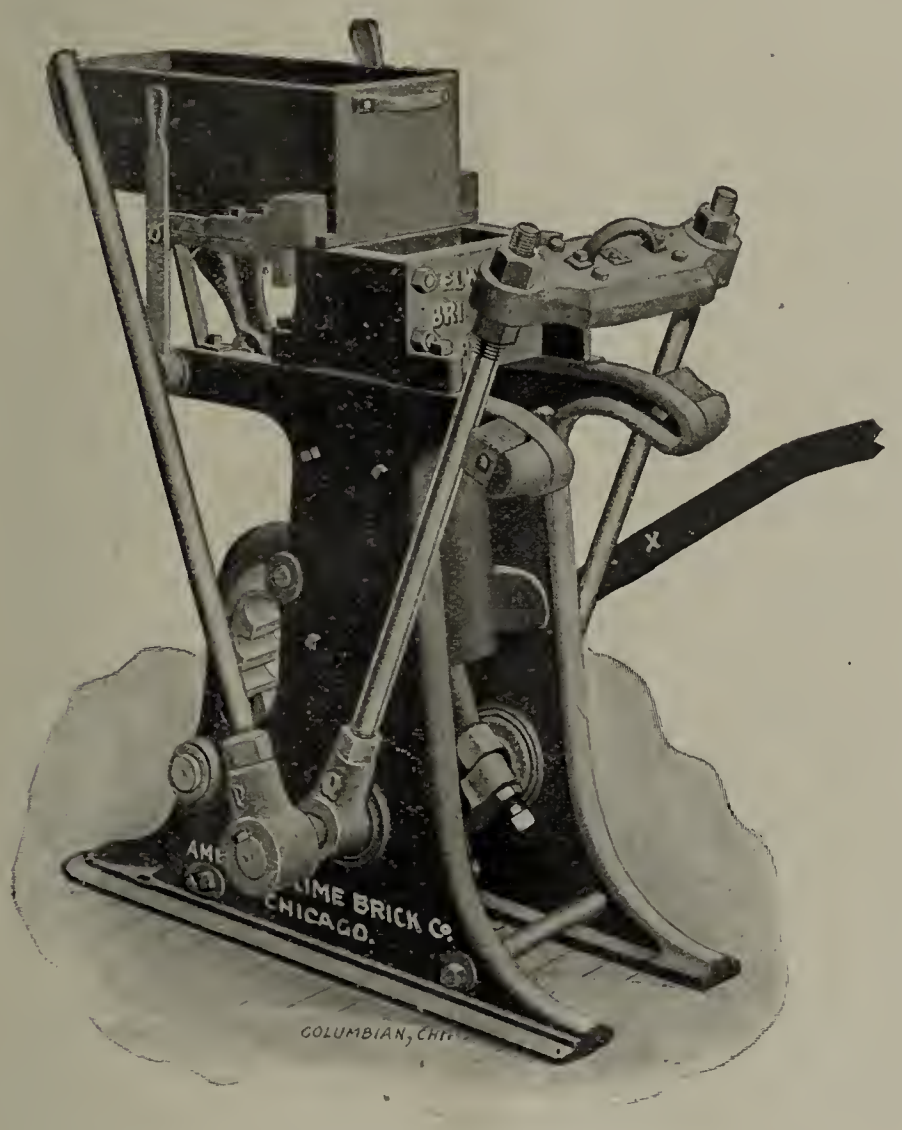
"The year has been a good one with us," said Frank Hunter, general manager of the Columbus Contractors' Supply Company. "Our brick plants have been run almost to their full capacity of 75,000 brick daily all year and we have sold all the brick we could make. The year has been a wonderful one in building operations and next year promises to eclipse even the one now almost ended.

"We have had some difficulty in regard to cars, but this has been the lot of all shippers. Our plants have been rounded into shape and next year we will expect to even do better than this year, which was our best one."

THE ELWOOD HAND BRICK PRESS.

For a long time there has been a field for a hand brick press such as the "Elwood" which we illustrate below. For shape brick work on sand-lime brick plants, also for sand and cement brick (both plain and shapes) and for dry pressed clay brick a hand machine of this kind can hardly be dispensed with, at least when you consider the saving and the time consumed to change the molds in the large press, etc.

The illustrated machine has both top and bottom pressure and the movement is practically the same as that of the large toggle power presses. Therefore, when used for shape work the brick can be laid in the wall and look like the product of the power machine.



Elwood Hand Brick Press.

No trouble in changing the thickness of brick or in holding any given thickness. The adjusting screw on the lever on the back side of the cut regulates the depth of the mold. The molds are lined with steel plates. The short lever O operates the charger box, long lever P gives the top pressure and lever X gives the bottom pressure. The lever on the back side of cut just showing above the top of the charger box is the lift-out for the brick. The height from the floor line to the top of the mold box is three feet, and the weight of the complete machine is 850 pounds.

This is the most recent of the many machines and devices that have been turned out by the American Sand Lime Brick Co. The Chicago office is 77 Jackson Boulevard and the works are at Anderson, Indiana.

MEMBERS OF COMBINE PLEAD "NOLO CONTENDERE AND HAND OVER $2,000 EACH.

Members of the so-called "brick trust" of Chicago entered pleas of nolo contendere to the indictments charging conspiracy to prevent competition. Nine of the ten defendants paid fines of $2,000 each. The court ordered the defendants to pay the costs.

Within two minutes after final judgment had been entered the fines had been paid. W. S. Forrest, attorney for the "brick trust," handed to the clerk a check for $14,000. Attorney Daniel Donahue, counsel for Patrick McMahon, business agent of the brick teamsters' union, and Charles Hank, business agent of the brickmakers' union, handed the clerk $4,000 in currency as payment of their fines.

The defendants are George C. Prussing, president of the Illinois Brick Company; John H. Gray, sales agent for the Illinois Brick Company; William H. Weckler, general superintendent of the Illinois Brick Company; Edward J. Tomlins, sales agent for the Chicago Brick Company; John Shelhamer, sales agent for the American Brick Company; Patrick McMahon, business agent of the Brick, Sand, Lime and Terra Cotta Teamsters' Union; Charles Hank, business agent of the Brickmakers' Union; The Illinois Brick Company; The Chicago Brick Company; The American Brick Company.

In the case of Weckler the state's attorney asked a separate trial. Counsel for the defense offered no opposition to this motion and it was granted. It is understood that the case against Weckler will not be pressed. The motion for the separate trial opened the proceedings before Judge Smith.

The plea of nolo contendere instead of guilty was insisted upon by the defense and will prevent the state in the future from using the present conviction against any of the defendants who made use of that plea.

In deciding the case Judge Smith said:

"The court, upon the plea and the evidence heard in open court, finds each of the defendants guilty of conspiracy to do an illegal act; to injure public trade; that they entered into and became members of and parties to a pool trust agreement, combination, confederation, understanding with each other to suppress trade and prevent competition in the manufacture of brick and in the sale, delivery, and distribution of brick to consumers and to the general public."

Mr. Olson said that he considered it a great victory for the state, but added that the evidence in his possession was of such a character that had the defendants stood trial before a jury on a plea of not guilty they would probably have been convicted, with a possibility of being sent to jail, besides having fines imposed against them.

A gigantic pottery organization has been perfected at Monmouth, Ill., and the Weir and Monmouth potteries have been purchased by the concern at a large consideration. The new corporation will be organized with immense capital, and the head offices of the concern will be in Monmouth.

CLAY RECORD.

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GEORGE H. HARTWELL, Editor.

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ENTERED AT THE CHICAGO POST OFFICE AS SECOND-CLASS MATTER.

Vol. XXVII. DECEMBER 16, 1905. No. 1

"I like to read American advertisements. They are in themselves literature, and I can gauge the prosperity of the country by their very appearance."—William E. Gladstone.

When times are dull and people are not advertising is the very time that advertising should be the heaviest. Ninety-nine out of every hundred merchants advertise most when there is least need of it, instead of looking upon advertising as the panacea for their business ills.—John Wanamaker.

CONVENTIONS.

The twenty-eighth annual meeting of the Illinois Clay Workers' Association will be held at Champaign, January 23, 24, 25th. Headquarters at the Beardsley.

The sixth annual meeting of the Wisconsin Clay Workers' Association will be held at Menominee, date not set.

The twenty-sixth annual meeting of the Iowa Brick & Tile Association will be held in Des Moines, January 10th, 11th and 12th, 1906.

The Eighth Annual Meeting of the American Ceramic Society will be held in Philadelphia, Pa , February 5-6-7, 1906. Headquarters at the Continental Hotel.

The Twentieth Annual Meeting of the National Brick Manufacturers' Association will be held in Philadelphia, Pa., February 7-8-9, 1906 (date of meeting).

Too many men pray with their fingers crossed.

Occasionally a man figures on a reserved seat in heaven because he once gave away an old coat.

A Merry, Merry Christmas to the readers of THE CLAY RECORD—one and all—no matter who they are.

THE CLAY RECORD is the only semi-monthly clay journal printed in America. As an advertising medium it has them all "skinned to death." As for giving you the news, it is there, too.

Don't be foolish and run yourself down when your neighbors and sometimes competitors are only too glad to do it for you.

In a recent issue, in discussing the question of corporations and whether state or national control would be the more effective, the conclusion reached was that state control was to be preferred. Since the Congress has assembled, and so far as can be figured out, it seems to favor state control of insurance matters and national control of railroad and industrial corporations. That the Congress will have a strenuous session is beyond peradventure, and it is to be hoped that in its highest wisdom it will work out solutions of the problems presented, and the country anxiously awaits the outcome. The general business is good, and the outlook for the next year's business could not be better and will result in the biggest business this country has ever enjoyed if the legislation along these lines shall be what it should be, and quieting the public, permitting it to give its entire thought to the consummation of plans already developed; otherwise, we are afraid a feeling of doubt and distrust will follow and develop into a bitterness of antagonism that will greatly disturb the conditions which now prevail and which make for the prosperity of the people. It would appear that the representatives of the people are fully awake to what their constituents are expecting of them, and this is deemed a healthful sign. The rights of the people must be recognized and maintained, and the people are looking to the Congress to make good; otherwise, the liveliest experience politically this country ever has had will be nothing compared to what the experience will be in the not distant future.

The convention of the National Association of Sand Lime Products, held in Detroit recently, was of unusual interest, not alone because of its youth, but on account of certain lines the organization seems to have adopted. These methods we hasten to speak of, that others may see the good effects and do as well, if not better.

The first feeling manifested was, the members were there to advance the business, the attendance was large, and we understand the membership is about 200, a lively growth, this being the second meeting. The attendance was nearly ninety.

The fees and the assessments, though big, the members evidently are getting more than value received for, and they are seemingly well pleased. And we noted a practice or rule that impressed us—this: If a member wished to hear what experts have to say on subjects, papers on which they had prepared, in order to obtain this data and information

he must go to the convention to get it. He cannot get it in advance in pamphlet form, nor will it be printed in full in the journals. So, if he would hear, he must attend; cannot expect to keep posted depending on these means, resorted to by many, rather than attend a convention. It would be well if other associations profited from this method and adopt it, thereby creating a value for the information these papers contain, and making what is worth having worth going after.

ILLINOIS CLAY WORKERS TO AGAIN MEET IN CHAMPAIGN.

It has been decided by the executive committee that the next meeting of the Illinois Clay Workers' Association will be again held at Champaign, January 23rd, 24th and 25th, 1906.

Arrangements had been completed to hold the meeting this year at Chicago, but in view of the excellent work accomplished in the interest of the Illinois Ceramic School it was decided to alter the plans and again meet at Champaign, the home of the University of Illinois.

The meetings will be held in the Elks' Auditorium, the same as last year, and the headquarters will be at the Beardsley, only a few doors away.

Those interested in the Ceramic School persuaded the committee to add another day to the preceding, therefore this will be a three day meeting. An unusual fine program has been arranged which deals with everything from the common drain tile to stoneware and terra cotta.

Last year one of the new features was the large and well filled exhibits room, containing all kinds of models of claymaking appliances and both raw and finished clay products. Members are requested to bring a sample of both the finished product and the raw materials, and after they have been exhibited they will be used in the Ceramic School as samples of the Illinois clays and wares.

The least that any clayworker from the state of Illinois can do for the good of the industry will be to spend a few days' time and attend these meetings, and not only that, but extend an invitation to your brother clayworker to come along.

Those attending the Champaign meeting last year will hardly forget the splendid banquet that was given to the visiting clayworkers. This year arragements have been made for a similar occasion, which already promises to surpass that of a year ago.

Clayworkers from any of the adjoining states are especially invited to come. Many of the subjects are of just as much interest to them as they are to clayworkers of the State of Illinois.

Information can be obtained at the secretary's office, on the ninth floor of the Plymouth Building, 303 Dearborn St., Chicago.

J. L. Richardson, Hurtsboro, Ala., is in the market for brick-making machinery.

OBITUARY.

John H. Inman, formerly of the pottery firm of Markle & Inman, Akron, O., died of Bright's disease at Penderville, Ohio. He was 58 years old.

J. E. Robinson, aged 78 years, one of the oldest brick and tile manufacturers in the state, died of heart trouble at his home in Dashler, Ohio.

Joseph L. Siner, for forty-five years in the brick manufacturing business at Harrowgate Lane, died at his home in Germantown, Philadelphia, Pa. He is survived by a widow and five sons.

William E. Kier, manager of the Kier Fire Brick Co., and son of W. Z. Kier, died of typhoid fever at his home, 1128 Mellon St., Pittsburg, Pa. He was 31 years old. Both the father and son died within two weeks.

C. Frank Cushwa, junior member of the firm of Victor Cushwa & Sons, Williamsport, Md., died of paralysis; age, 34 years. He was also the secretary of the Conococheaque Brick Company.

William L. Kier, aged 56 years, died of pneumonia at his home, 5820 Collowhill St., Pittsburg, Pa. He was the president of the Kier Fire Brick Co., which has a plant at Salina, established by his father sixty years ago.

FIRE! FIRE!! FIRE!!!

The new brick plant of Bach Brothers, Montrose Blvd. and River, Chicago, was completely destroyed by fire four days after it started.

Fire practically destroyed the dry kilns of the Arkansas Brick & Mfg. Co., Little Rock, Ark. The loss to the building is $3,000, fully covered by insurance.

Sparks from a terminal belt engine at Toledo, Ohio, caused a loss by fire of $800 to the plant of the Findlay Hydraulic Press Brick Co., the kiln sheds burning to the ground.

The plant of the Columbia Fire Clay Co. at Washingtonville, Ohio, owned by E. B. Allen of Cleveland, was destroyed by fire, entailing a loss of $10,000, partly covered by insurance.

The Hamburg (Pa.) Vitrified Brick Co.'s works at West Hamburg were destroyed by fire, causing a loss of $50,000. The company has large contracts for Panama brick, and the plant will be rebuilt at once.

VERY LOW EXCURSION RATES FOR CHRISTMAS HOLIDAYS

To all points on the Nickel Plate Road between Chicago and Buffalo. Dates of sale, December 23, 24, 25, 30 and 31, 1905, and January 1, 1906, with limit returning January 3, 1906. Rate, one and a third fare for the round trip. Individual Club Meals, ranging in price from 35 cents to $1.00, and Mid-Day Luncheon, 50 cents, served in Nickel Plate dining cars; also service a la carte. No excess fare. Chicago city ticket offices, 111 Adams street and Auditorium Annex. Depot, La Salle and Van Buren streets, the only depot in Chicago on the Elevated Loop.

PLANS FOR ENTERTAINMENT OF THE IOWA CLAYWORKERS.

The following plans have been made for the entertainment of the members of the Iowa Brick and Tile Association:

Convention will be held January 10th, 11th and 12th, at Des Moines.

Secretary's headquarters will be located at the Kirkwood Hotel.

Opening session of the convention will be held Wednesday morning at 10 o'clock in the lodge room of the Elks' Club House on 5th Street, between Locust and Grand Ave. Program will be continued Wednesday afternoon at 2 o'clock and Thursday morning at 9 o'clock at same place. On Thursday afternoon arrangements have been made to visit some of the Des Moines clayworking plants.

There will be a banquet served for the delegates at the Grant Club House, at Fifth and Grand Ave., on Wednesday evening at 7 o'clock.

On Thursday evening an informal smoker will be held at the Elks' Club House, at which an informal vaudeville program will be given.

The Iowa State College at Ames has invited all the delegates to go to Ames on Friday morning to see their clay experiment station. A rate of $1.15 for the round trip has been secured, provided 100 delegates attend, and special cars will be provided for their use. If a less number than this makes the trip special rates will be made, depending on the number in the party.

Application has been made for special rates from all points to Des Moines for the use of members of the Association, and members should ask information in regard to this from their station agents when buying tickets, and take a certificate from him.

WATERPROOFING BRICK ARCHES.

The waterproofing of exposed brick arches has long been regarded as highly important, though it has not been very generally done. The Pennsylvania Railroad Company is at present constructing a viaduct in Wilmington, Del., and the precaution of waterproofing the brick arches has been taken. The process employed may prove of interest and value. It is substantially as follows:

The masonry, having been first smoothed over with cement mortar, is covered with a special compound on which is laid a layer of hydrex felt. This is applied in such a manner that it will lap, to a distance of at least twelve inches, on the transverse seams. Of the compound and felt, five layers are employed and great care is exercised to securing the greatest possible tightness at the spandrel walls and around the drain pipes. So essential is this regarded to be that the felt is carried up the back of the former and turned about two inches into the joint under the coping, where it is securely held with cement mortar. The waterproofing on the walls is protected with a single course of brickwork and on the arches by one inch of cement mortar.

ACCIDENTS, DAMAGES AND LOSSES.

Frank Forney, age 22 years, employed at the pressed brick company, Johnstown, Pa., was caught in the belt and killed.

A verdict of over $14,000 has been granted to F. K. and Mary Chapple, against the Kansas Vitrified Brick Co., Chanute.

Howard L. Leach of J. M. Leach & Co., Kokomo, Ind., has left the city, very heavily in debt. This will not affect the company.

Frank Mitchell, age 11 years, son of Jesse Mitchell, a brick manufacturer at Princeton, Ind., was drowned while skating on the brickyard pond.

John J. Campbell of Wilkinsburg, Pa., a brick manufacturer, filed a petition in voluntary bankruptcy, alleging his debts to be $73,785 and assets $70,060.

It is said that Antone Ehrman, former manager of the Louisiana Stave & Tile Co., Shreveport, La., is short in his accounts about $40,000. Experts are now at work on the books.

Philip Wilbert, Jr., had his foot and ankle smashed at the Thompson's Brick Yard, Edwardsville, Ill. He was oiling up the dry pan and someone started up the machinery while he was standing in the pan, the rolls crushing his foot.

Anthony Fabian, superintendent of the Mascoutah (Ill.) Brick Co., was instantly killed and his head completely torn from his body by being caught in the shafting in the machine room. He was 42 years old and only recently married.

MIDDLETOWN SHALE BRICK COMPANY THE NINTH TO BE ACQUIRED BY UNITED STATES BRICK COMPANY.

Another large brick manufacturing plant has been added to the possessions of the United States Brick Company, which has headquarters in the Colonial Trust building, Reading, Pa., and this new acquisition places nine plants under the direction of the company.

The latest purchase was consummated on December 4, when the property of the Middletown (Pa.) Shale Brick Company, located on the main line of the Pennsylvania railroad, at Middletown, about nine miles south of Harrisburg, passed into the hands of the United States Company.

The Middletown plant has a capacity of 25,000 brick a day and is situated in the midst of an abundant supply of excellent shale. It is the intention of the United States Company to enlarge the output of its latest acquisition and under the methods of the purchasers the capacity will soon be increased to 100,000 brick per day.

Among the nine plants now owned by the company are the Montello and Wyomissing plants, located at Wyomissing, and the plant of the Reading Shale Brick Company, which was recently purchased by the United States Company.

ONE DOLLAR PER THOUSAND INCREASE ON RUN OF KILN BRICK—OTHER GRADES ADVANCE 50 CENTS.

Prices of all grades of brick produced at their plants were increased by the manufacturers of York, Pa., and its vicinity, who are members of the York Brick Manufacturing Association. The new scale will go into effect January 1, 1906.

The brickmakers held their annual meeting and this scale of prices was adopted: Run of kiln brick, $6 per 1,000; salmon, $5.50 per 1,000; arch, $6.50 per 1,000; lime, $7.50 per 1,000; paving, $8.00 per 1,000.

The increase over the present year's prices is $1.00 on the run of kiln brick and 50 cents on the other kinds. Deliveries without extra charge will be made as far as the western boundary of the city and as far north as toll-gate No. 2, North York. For deliveries involving a greater distance an additional 50 cents per 1,000 will be asked. Two per cent less in prices will be charged for all brick paid for within a period of ten days.

The association was organized last May and is composed of the Springgarden Brick Company, Ltd.; W. H. Grothe, C. E. Miller, York Brick Works, and Benjamin Kissinger's Sons.

John Kissinger is the president, Elmer E. Frey the secretary, and J. Frank Gable the treasurer and auditor.

CHICAGO BUILDERS OFFER 75 CENTS AN HOUR FOR BRICKLAYERS

One of the greatest building booms Chicago has seen for years has brought to union labor a season of prosperity which has never before been known and prices have now been raised for wageworkers to a point where builders are petitioning the Building Trades' Association for bricklayers at figures exceeding the scales of contracts.

All through the downtown district, where skyscrapers are under erection, and through the outlying districts, where smaller buildings are going up, there is a dearth of bricklayers, and wages have gone up to 75 cents an hour. The scale of wages is 62½ cents for this class of men under normal conditions, but the lack of men has brought about a gradual increase.

THE ERIE RAILROAD COMPANY'S INDUSTRIAL DEPARTMENT.

The Erie Railroad Company, operating between New York and Chicago, with many side lines or branches, has made great progress during the last year in securing industrial enterprises for its line. They have secured over eighty new plants. About one-half of their switch tracks go into the property, and several of them ran up into the millions of dollars to build.

Brick plants have sprung up along the line in New Jersey, Pennsylvania, New York, Ohio and Indiana.

If you are seeking a location or intend to change, you can do no better than to consult with Mr. Luis Jackson, Industrial Commissioner Erie Railroad Company, 21 Cortlandt street, New York.

MANUFACTURER OF BRICK IN THE BIRMINGHAM DISTRICT.

The brick-making industry in the Birmingham (Ala.) district has been developed rapidly in recent years. The rapid growth of the city itself has furnished an excellent market for the industry. The Birmingham district has become so important as a brick-making center that the annual convention of the American Brickmakers Association was held there last spring.

There are now within the district fourteen yards that manufacture common brick, one plant that manufactures paving brick, two plants that manufacture firebrick, and, besides these, there are pressed brick, sand lime brick and fireproofing plants situated in or near the city.

The common brick-making plants have a capacity of 400,000 brick per day.

The fire-brick plants in the district turn out 100,000 brick a day.

The sand lime, 25,000, and the paving brick, 50,000.

The market for the brick manufacturing in the Birmingham district is confined almost exclusively to Alabama and Mississippi.

The Birmingham district alone, on account of its wonderful recent development, consumes at least 75 per cent of the total output.

Most of the important brick buildings erected in this city, and the number has increased remarkably within three years, have been constructed out of home-made product. The sanitary sewers have been made of brick manufactured in the district.

It is admitted that the clay found in the Birmingham district is for brick-making purposes unexcelled in the country. The plants already established do an annual business of several million dollars. Their scope has been confined thus far largely to providing material for the home market, but it is expected that the local plants will be so enlarged that they will be able to enter distant markets and find a ready sale for their product. This will be done the moment labor sufficient to carry on the work can be obtained.

THE NATIONAL ROTARY SAND-LIME BRICK PRESS.

The National Brick Machinery Company, Chamber of Commerce building, Chicago, has just put on the market the National Rotary Sand-Lime Brick Press. Its weight is sixteen tons and its strength is enormous.

This press, as the name implies, is a rotary, having a revolving table, having sixteen mold boxes, and is the first American rotary press to have both the top and bottom pressure on the brick. The press is now working satisfactorily in a sand-lime brick plant in Michigan and may be seen by making the proper arrangements with the owners with the above company. A complete line of sand-lime machinery is now being made by this company, under the supervision of Peter L. Simpson, the inventor and president of the company.

SAND OR LIME BRICK OR BLOCK NEWS.

In looking over the advertisements for the making of sand-lime brick do not neglect those on pages 8-9-40-45-46-47-48-49-50-58 and 59. Some of them will interest you.

The Laketon (Ind.) Sand Brick Co. has just secured a fine order for sand-lime brick to be used in the construction of a large church in Wabash.

Wm. Hewartson, 137 Pandora Ave., Victoria. B. C., is interested in establishing a sand-lime blick plant in that section of Canada.

The Lima (O.) Sandstone Co. has been incorporated with $5,000 capital stock by M. O. Gates, H. M. Moore and Fred C. Becker.

Rockaway Beach, L. I., N. Y., has had representatives of some large brick company looking about for a suitable site for a sand-lime brick plant.

The Waterloo (Ia.) Cement Tile Machine Co. has been organized with $30,000 capital stock. J. H. Stewart and John Schenk are stockholders.

The Portland (Oregon) Stonebrick Mfg. Co. has been organized with $175,000 capital stock. Incorporators, M. B. McFaul, Thomas K. Muir and F. King.

The Evanston (Ill.) Hydraulic Stone Co. has been incorporated with $15,000 capital stock by G. W. Esentrott, F. G. Hill and F. A. Parsons.

The Monterey Brick and Stone Co. has begun making brick at their Seaside, Cal., plant, under the Schwartz process. The plant cost $40,000 and is a splendid addition to the industry.

At Schenectady, N. Y., are two sand-lime brick plants in course of construction within one-quarter mile of each other—The Schenectady Sandstone Brick Co. and the Schenectady Brick Co.

E. A. Fuller, Oakwood, O., purchased in Ft. Wayne, Ind., a complete brick, tile and building block machine and will take out his saw-mill and rearrange his machinery so as to have shed room for brick, tile and blocks.

The Savannah (Ga.) Sand-Lime Brick Co. is now installing its plant at Eden, Effingham county, where it is expected in a short time to be making 40,000 sand-lime brick per day.

The Favorite sand cement brick machines have just been placed on the market by the Cement Machinery Co., Jackson, Mich. It is the latest invention of Levi P. Normandin.

William E. Howes Co., 328 No. Market St., Camden, N. J., has been incorporated with $50,000 capital stock to make brick, lime, artificial stone and building materials. Incorporators, Curtis T. Baker, Herbert F. Harris and W. E. Zeller.

The John B. Rose Co., office in New York City, which is the largest commission brick firm in the world, has purchased the Gimsey property at Milton, N. Y., consisting of 1,500 feet of water front and thirty acres of land. The property has a sand deposit of 160 feet high and it is proposed to build a sand-lime brick plant.

MISCELLANEOUS ITEMS.

Frank P. Morse and others, all of Marietta, Ohio, have organized the Noble Brick Co. and are building a plant near Ava, Ohio.

The new brick plant of the H. Collins (Colo.) Pressed Brick Co. has been started on its regular work. The factory has a capacity of 40,000 brick per day.

The plant, business and good will of the Dale Brick Co., Des Moines, Iowa, has been sold to the Goodwin Brick & Co.

Rapp Bros., of Morton, Ill., has bought 10 acres of clay land in East Peoria, Ill., and will build a brick, tile and pottery plant.

The Art Portland Cement Co. has been organized with $500,000 capital stock to build a white cement plant at Kimmell, Ind.

The Cleveland Vitrified Brick Co., Oklahoma City, Okla., has been incorporated with $50,000 capital stock by T. W. Williamson, George G. Sohlbery and J. L. Wilkin, of Oklahoma City.

The Covington (Va.) Brick Co. has been incorporated with $10,000 capital stock. Mary E. Clark is president, C. T. Carter vice-president, and Isaac Clark secretary and treasurer.

Edward Bagley, John Carbo, Mr. McDonald and two Italians, residents of Berlin and New Britain, are organizing a company for the purpose of going into the brick business at Berlin, Conn.

W. H. Bushel and wife, brick manufacturers at David City, Nebr., sailed on the Umbria for a three months' visit to England. He writes he had a splendid season's run and was putting in some new machinery and would double the capacity of the dryer.

In our last issue we reported the plant of the Humphrey Brick & Tile Co. at Brookville, Pa., completely destroyed by fire, which was not the case, only two frame buildings being destroyed and machinery practically uninjured. The buildings have been replaced with hollow block structures, of which they are large manufacturers.

John Halpin, who has been in the employ of the Tiffany Pressed Brick Co. at Momence, Ill., for twenty years, has accepted a position with the Southern Clay Mfg. Co., Chattanooga, Tenn.

The Utah Fire Clay Co., Salt Lake City, Utah, is making $20,000 worth of improvements in their sewer pipe department, which will increase the company's output three times.

Mr. W. B. Garrabrants, Berkeley Heights, New Jersey, has placed contract with the Henry Martin Brick Machine Mfg. Co., Lancaster, Pa., covering the latest improved "MARTIN" Dryers together with the "MARTIN" Latest Improved Cable Delivery System, the Dryers of 15,000 capacity.

The Great Western Sewer Pipe & Tile Mfg. Co. will establish a plant at Medicine Hat, Assinaboa, Canada.

The Kasten & Schmucke Pressed Brick Co., Jackson, Mo., has been incorporated with $10,000 capital stock by R. C. Kasten, A. J. Kasten and Joseph E. Schmucke.

Samuel M. Brightbill, president of the Harrisburg (Pa.) and Steelton Brick Co., has been chosen as a director of the Steelton National Bank.

The three brick yards of Canton, Ill., burned and sold this year over 10,000,000 brick, and the tile plant burned and sold 200,000 tile, all to the local market.

The Dennis Brick Co., Newington, Vt., has been incorporated with $31,500 paid in. The incorporators are Joseph Dennis, Eliza Dennis and John E. Dennis.

The demand for the product of the Unzicker Brick and Tile Works at Peru, Ill., is so great that the firm will double the capacity of the plant.

The Humboldt (Tenn.) Brick and Tile Company has closed a contract with the Tennessee Brick Company, Memphis, for the complete output of their plant for a year.

The Portland Cement Works at Portland, Colo., will shortly be re-doubled in capacity to meet the vast increase in the business. Charles Boettcher of Denver, president of the company, just received an order from Washington for 100,000 barrels cement.

It is reported that the North Texas Press Brick Co., Ellsworth, Texas, will make improvements to its plant by increasing its capacity; also add machinery for manufacturing vitrified brick, with the dry presses that are now being made.

W. C. Mitchell, superintendent, and E. H. Johnson, assistant superintendent of the Banner Clay Works, Edwardsville, Ill., have resigned and it is said will start a roofing tile plant in Cuba. They are backed by St. Louis capitalists.

The Colorado Coal & Clay Co., Colorado Springs, Colo., has been formed by Edwin Arkell, F. H. Dunnington and J. C. Colligan, and bought 320 acres of land four miles north of Calhan on the Rock Island Ry. The company will manufacture brick, tile and other clay products.

The Cleveland (Okla.) Vitrified Brick Co. has purchased a plant at Cleveland, having fine shale and natural gas in abundance. The office of the company is 318 Security Bldg., Oklahoma City. The same stockholders or officers also own the Oklahoma Brick Co. Chas. A. Hoshour is the secretary and general manager of both companies.

Messrs. Brigham Bros., Kingston, N. Y., have placed their order with the Henry Martin Brick Machine Mfg. Co., Lancaster, Pa., covering two of the Latest Improved "Martin" Style "A" Brick Machines, having two mold entrances, fit up with Pug Mills, Elevators, etc.; also their order covering one 5-ft. Dry Pan, and the Latest Improved "Martin" Steam Brick Dryers of 100,000 capacity, including the "Martin" Latest improved Cable Delivery System.

Simon S. Kline, 450 Boston avenue, West Reading, Pa., informs us that he is in the market for a soft mud machine.

The California Sewer Pipe Company, Los Angeles, Cal., has changed its name to the California Clay Manufacturing Company.

The Meyenberg Terra Cotta and Brick Company has purchased the Adams farm and brick yard at Battle Creek, Mich., and will build a large clay working plant there.

M. J. Olewiler, brick manufacturer of Red Lion, Pa., has gone for the winter to Jacksonville, Fla., where he has a cottage.

The Twin City Brick and Supply Company, Limited, Port Arthur, Ontario, has been incorporated with $50,000 capital stock.

The Newport Pressed Brick and Stone Company, Cote Brilliante, Campbell county, Ky., has been incorporated with $60,000 capital stock.

Commissioner Haarer has received word from Professor Orton of Columbus, O., that the shale Detroit proposes to use is all right. Work on the city plant is going ahead in spite of the suit started by Charles Flowers.

The Ford City (Pa.) Brick Company has been incorporated with $10,000 capital stock. Directors are Edwin L. Ivons, Pittsburg; Charles F. Schall and A. L. Ivory, Ford City.

It is stated that the plant of the Fiske Brick Company, at Dover Point, N. H., which has been in the hands of the receiver for some time, will be remodeled before another season and brick made by another process.

Straight Bros., Spencer, Iowa, have bought land and will build the third tile factory for them on same. The building will be 42x400 feet and five stories high. The plant will have six 30-foot kilns.

W. J. Carmichael has joined the engineering and sales department of the American Clay Machinery Company and is stationed at the Willoughby (O.) plant, where the sand-lime brick machinery is being made.

Paul Oscar Abbe, of the Abbe Engineering Company, 222 Broadway, New York, was married to Henrietta Elvira Eck in Brooklyn, N. Y., the 29th of November. Success to you and yours.

The United States Brick Company, Reading, Pa., has acquired the Middletown Shale Brick Company, at Middletown, Pa. The capacity of the plant is 25,000 brick daily, which will be increased to 100,000.

The Dry Pressed Brick Yards, Sandpoint, Idaho, have been incorporated with $50,000. The company has been making brick the past season at Sandpoint. The incorporators are George H. Williams, Patrick J. Clinton and George Groshoff, all of Spokane, Wash.

The Willard Brick Company, Chattanooga, Tenn., has changed its name to that of the Mission Ridge Brick Company. The company has a large plant at Mission Ridge station, on the Central of Georgia Railway. The officers are Frank L. Miller, president; Gus H. Miller, vice-president; John D. Key, secretary and treasurer.

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On a 32-acre farm, 4 miles west of Macomb, Ill.' containing 20 acres of a 10-foot vein of fine pottery clay, a 5x10-foot shaft in good repair at same. Will lease from one to ten years or longer at 10 cents per ton, weighed on ground and settled for monthly. Company to have access to any part of land for mining and digging clay. Also a vein of coal 25 to 30 feet below the clay to lease at ½ cent per bushel. For further particulars address

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For sale, reasonable, in condition—
One 5x18 foot Horizontal Tubular Boiler.
One No. 20A Penfield Hollow Brick Machine.
One 14 foot Pug Mill.
One Disintegrator,
One 40 foot Clay Conveyor, with 20 foot belt.
Forty Fire-proofing Dies, with two extensions, pullys, clutches and belting.
Reasons for sale, are making different ware.

R. 611, W. 51st St.,
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50 rack cars for 32 inch pallets, capacity 432 brick; track gauge 24 inches.
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1 Centrifugal Pump.

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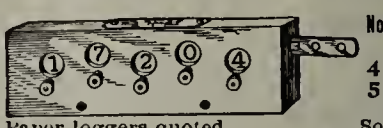

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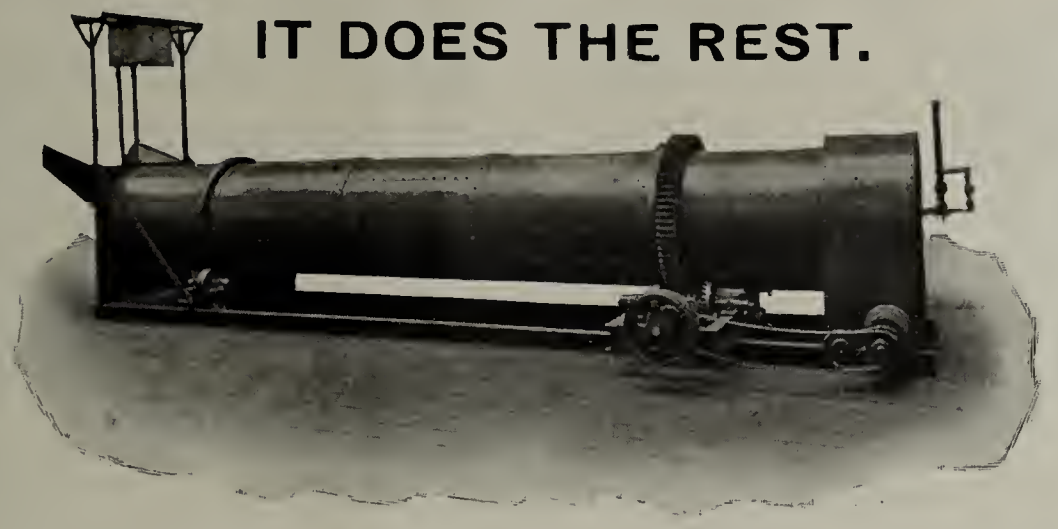

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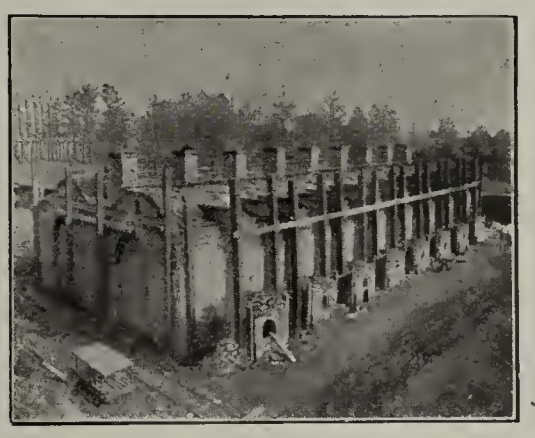

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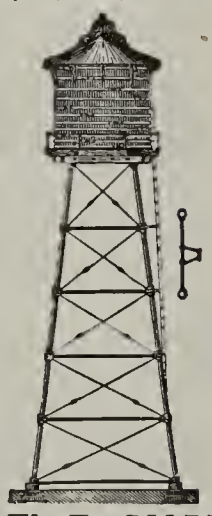

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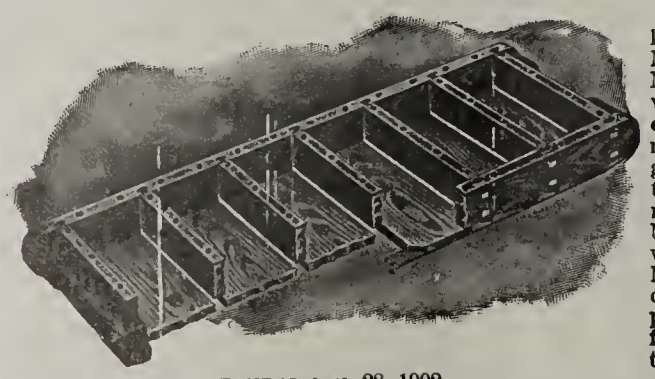

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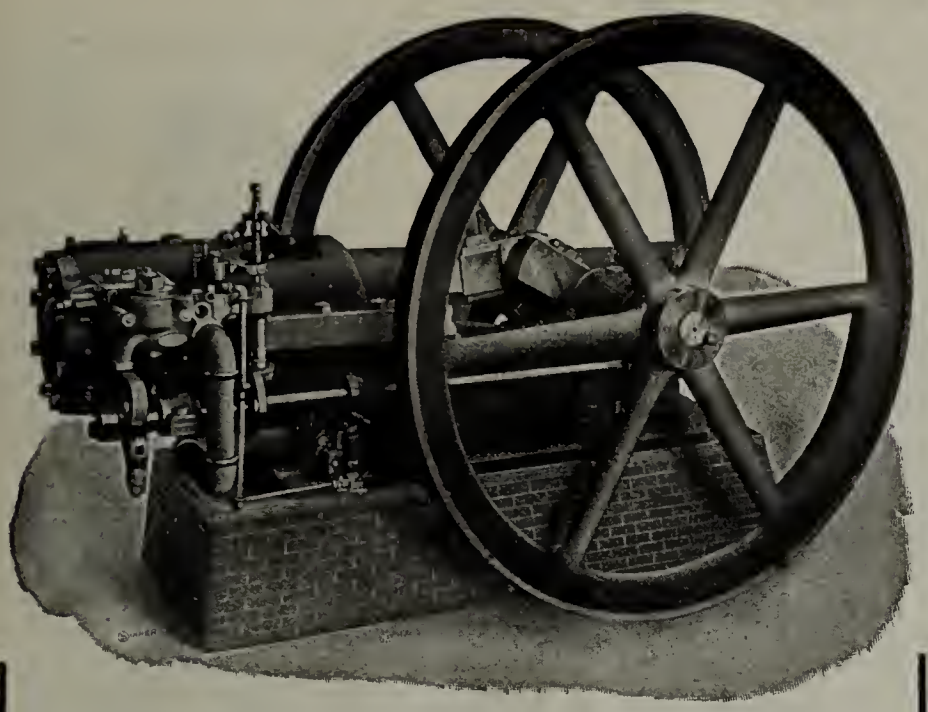

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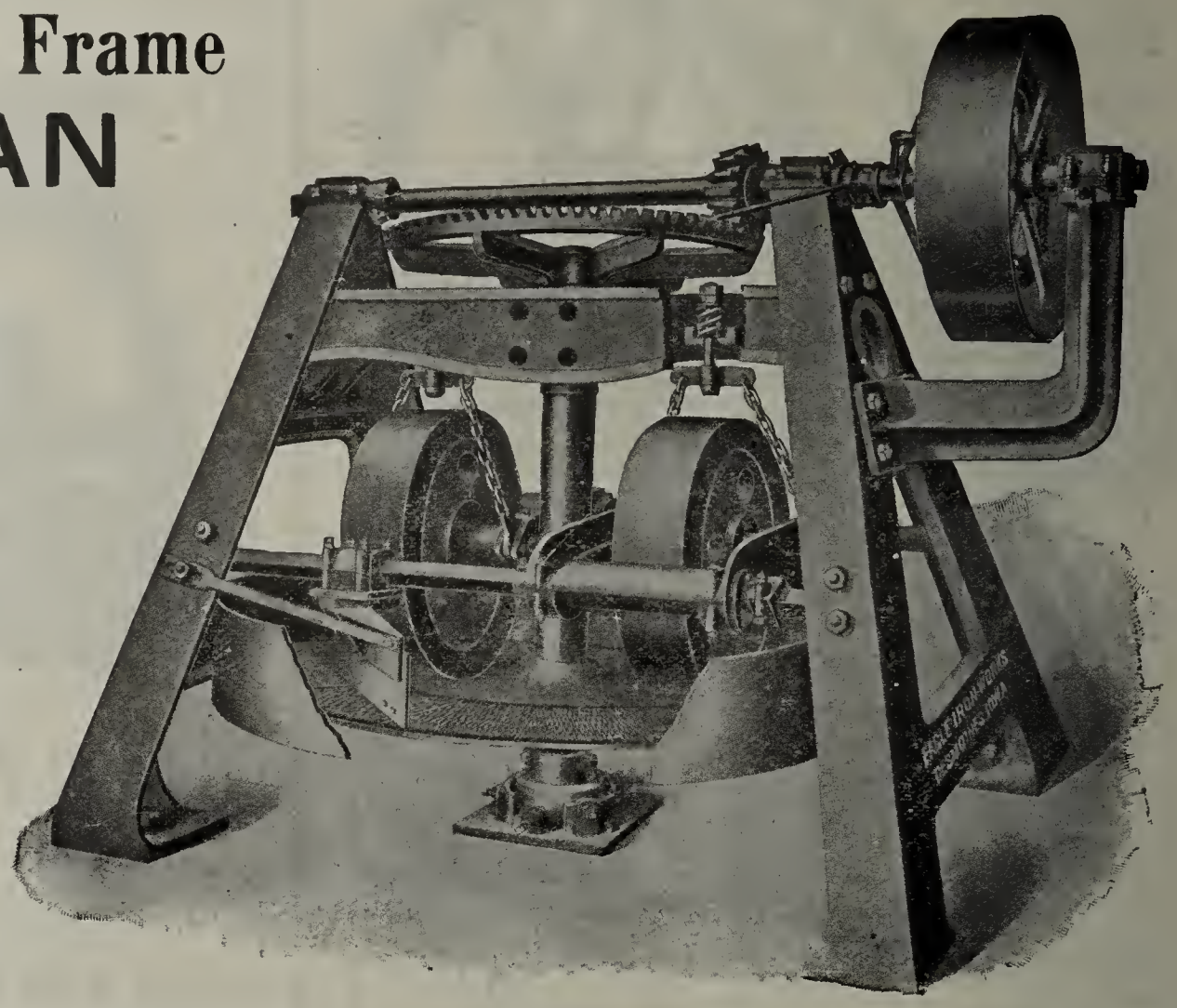

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The Erie Railroad System's Industrial Department has all the territory traversed by the railroad districted in relation to resources, markets and advantages for manufacturing, and can advise with manufacturers of specific products as to suitable locations, furnishing them with current information of a comprehensive nature, dealing with the project in its full relation to manufacture and commerce.

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Plants Installed and Started Under Iron-Clad Guarantees. Equipped Throughout with Machinery Built in Our Own Shop.

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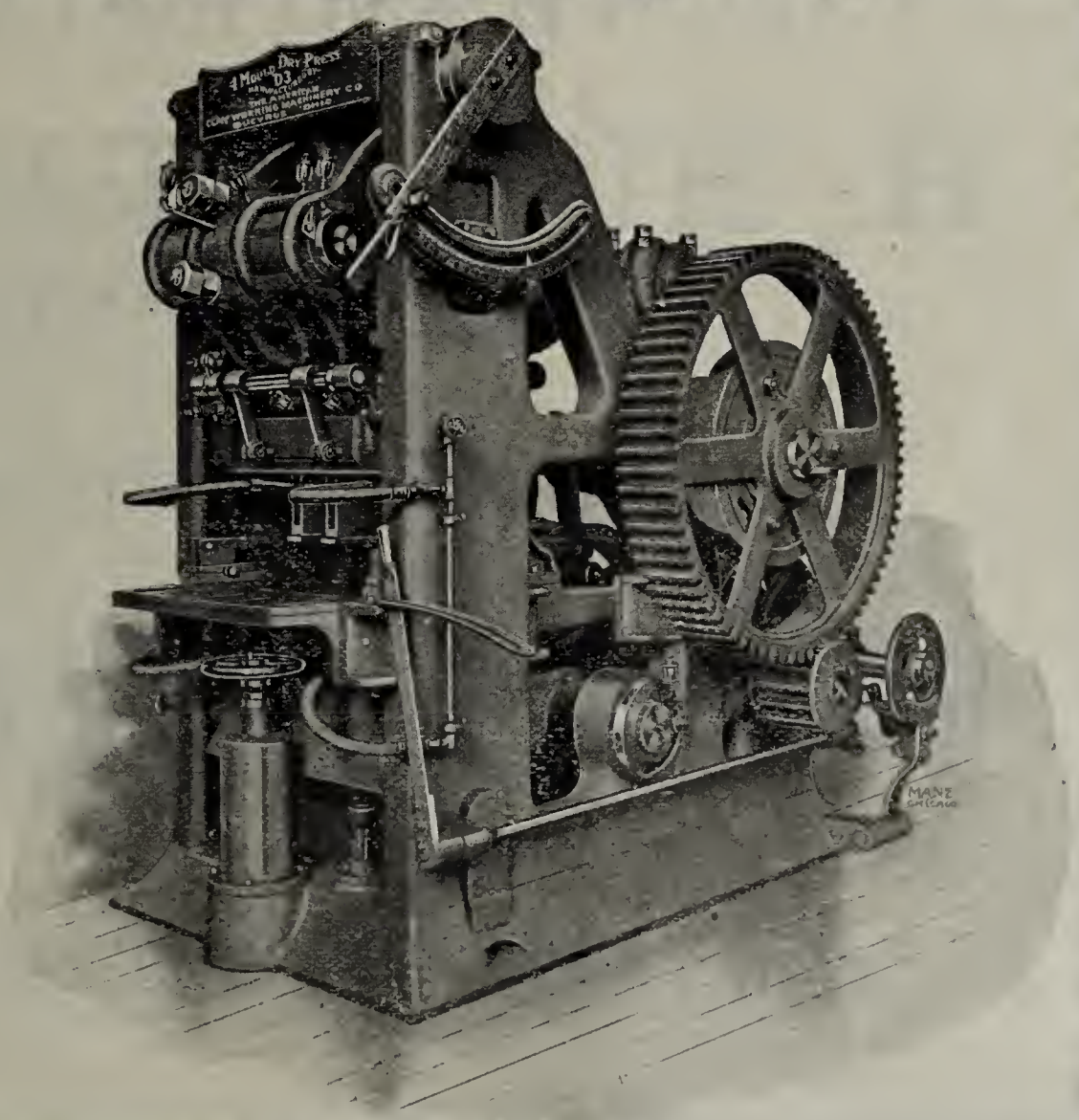
We build Stiff, Soft Mud and Sand-Lime Brick Machinery, all kinds of Dryers and their equipment. We build all our own Dryers and can guarantee them.



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American Clay Machinery Co.

BUCYRUS, OHIO, U. S. A.

Sand-Lime Bricks and Blocks

Machinery and Process

OWNED AND INSTALLED BY

H. HUENNEKES CO.

(INCORPORATED)

Is up-to-date and produces

HIGH-GRADE BUILDING MATERIAL

(SEE OPPOSITE PAGE)

"Huennekes System"

SAND-LIME BRICKS AND BLOCKS

25 Factories Designed, Equipped and Set in Operation During the Past Year in the United States and Canada.

OUR RECORD: Combined capacity of factories in 1903, 15 million bricks per annum.
Combined capacity of factories in 1904, 150 million bricks per annum.

Received from the Jury of Awards at the Louisiana Purchase Exposition the highest award for excellence of sand-lime brick.

U. S. Company's Quarters, Whipple Barracks, Prescott, Arizona, Erected Out of "Huennekes System" Sand-Lime Bricks.

Factory of the Arizona Sand-Stone Brick Company, "Huennekes System" Prescott, Arizona, Finished in Bricks of Their Own Manufacture.

"THINK THIS OVER."

Before the expiration of this year the total combined capacity of the factories erected and operated under the "Huennekes System" will be about 300 million bricks per annum—or a growth of about **2,000 per cent in one year.**

Remember the doubts and scoffings about the "**dry pressed brick**" but a few years ago and the money made by the pioneers in this business.

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All of our special machinery is manufactured in the United States by the foremost machine shops in their particular line of business, and are thoroughly tested, insured and guaranteed before leaving shops. All special machinery, as well as our methods and process are fully protected and covered by United States Patents. **Without the use of the same it has proved impossible to produce a high grade brick out of sand and lime in a commercial way at a low cost. The rapid growth of our business from 15 million brick per annum in 1903 to 150 million brick per annum in 1904** is not only a proof of the merits of the "Huennekes System." but also of the product itself.

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Plants Erected of any Capacity

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INDIANA SAND-LIME BRICK CO.

North Judson, Ind., Oct. 13th, 1905.

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Gentlemen:

We have our plant in operation and have many orders on our books. We are very well pleased with the machinery which we purchased from you, and trust same will continue to be satisfactory, as we now feel more than ever that we made no mistake in buying your system.

Yours very truly,
(Sd) INDIANA SAND-LIME BRICK CO.
Per Silas Myres, Secy."

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If so, you need what we have.

Our System is used by the first Sand-Lime Brick Plant in the United States, and has been in continuous operation and has produced and sold more brick than any other single plant.

Send for information. We have equipped plants in all parts of the United States. We do not use cement or chemicals, and do not sell patent rights.

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Special Sand Brick Presses
Hardening Cylinders
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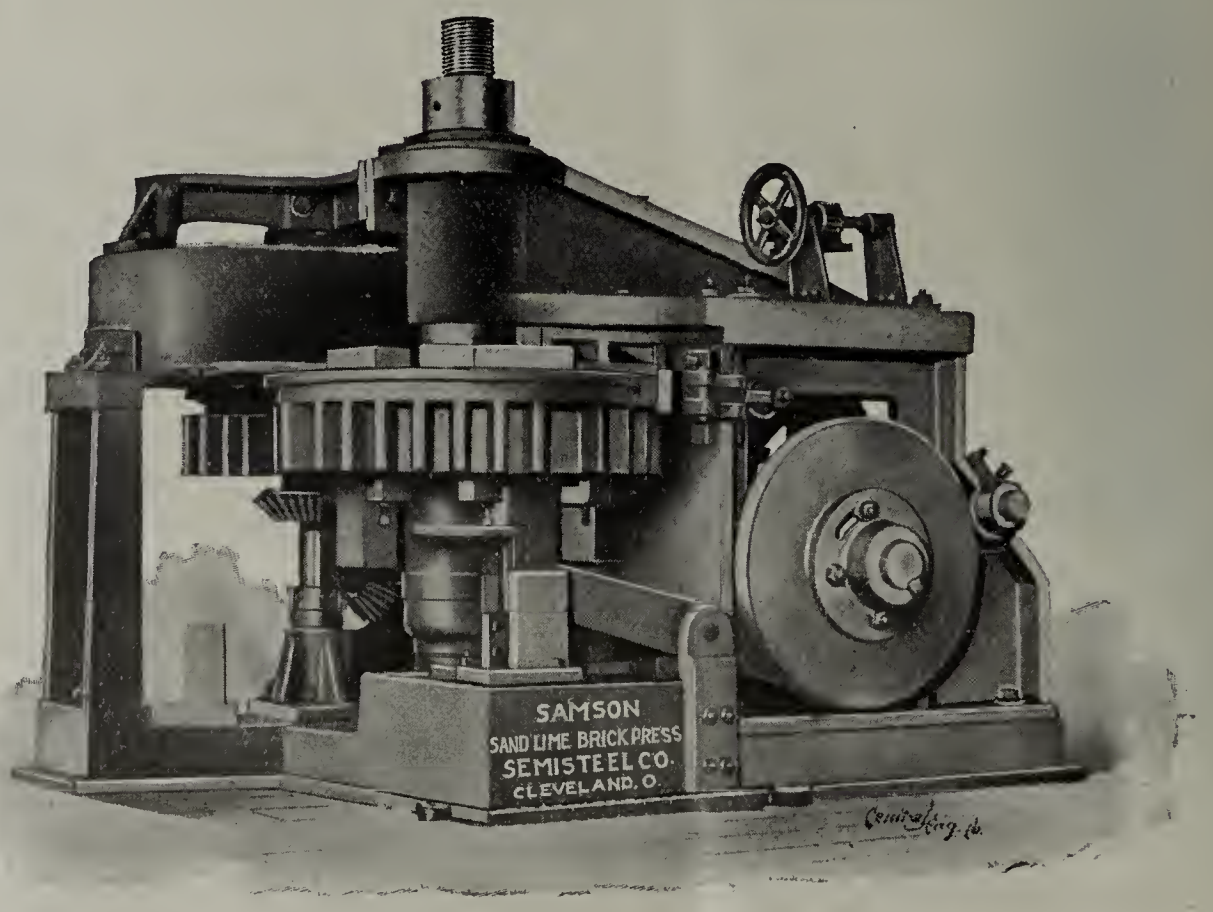

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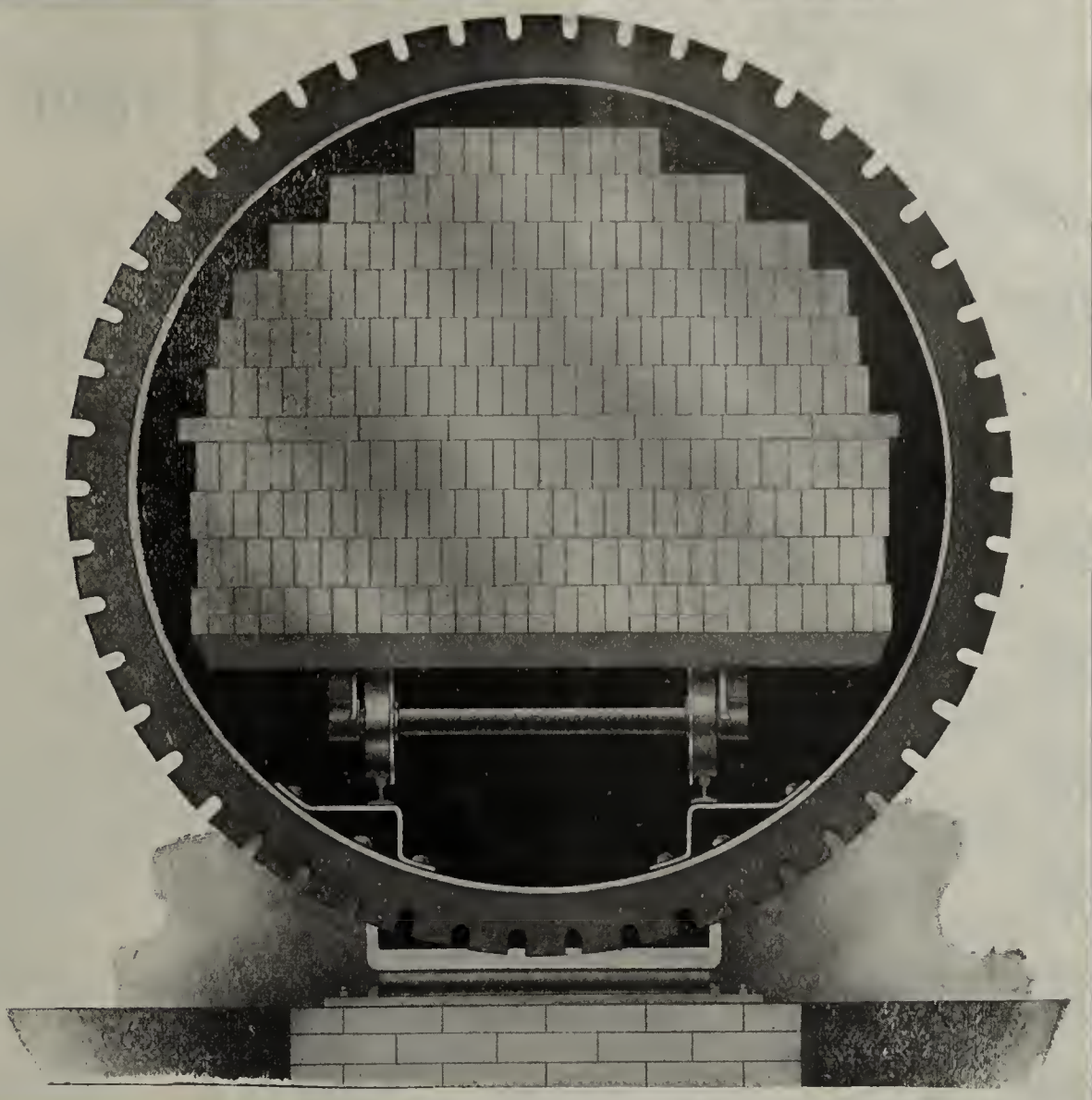
Our Sand-Lime Brick Machinery is at least a little better than any other. We have testimonials to show it. We build it all in our own factory and are sure of its quality. We are the only firm doing this. We will design and equip your entire plant, or will sell you parts of your equipment. Our catalog, describing and illustrating our full line, will be sent upon request.

We also build a full line of machinery and appliances for making Clay Products, Cement and Pottery, Dryer and Dryer Apparatus.

Everything we sell we make. We therefore know its quality to be right.



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The Thew Steam Shovels

Made In Four Sizes. Mounted on Car Wheels or Traction Wheels.

Type No. 3 Shovel—George Gynn Brickyard, Cleveland, O.

Especially adapted for brickyard requirements. The shovel operates in a complete circle, enabling material to be delivered at side or in rear at will. The Dipper is hung from a horizontally moving carriage and can be adiusted to cut to any desired level.

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Wire Cables used instead of Chains.
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AN IMPORTANT STEP

in the manufacture of

SAND LIME BRICK

One of the most important steps in the manufacture of **GOOD SAND LIME BRICK** is the shaping of the raw materials into brick form. Most of the processes for the manufacture of **SAND LIME BRICK** rely upon excessive pressure to accomplish good results.

This often leads to breakdowns and expensive delays since the presses are seldom constructed strong enough to withstand for any great length of time the excessive strain put upon them.

In making brick by the **"SCIENTIFIC SYSTEM"** all this is changed. Excessive pressure is not necessary owing to the way in which our materials are **PREPARED** before being fed to the press **COLUMBIA**.

Our **PRESS "COLUMBIA"** is so constructed that **EACH BRICK** receives individual treatment and therefore ample pressure. This is one of the reasons why **SAND LIME BRICK** made by our **"SCIENTIFIC SYSTEM"** is greatly superior in quality, strength and appearance to any other brick on the market.

If you are contemplating the erection of a **SAND LIME BRICK** plant or the installation of **SAND LIME BRICK** machinery, it will be well worth your while to investigate the

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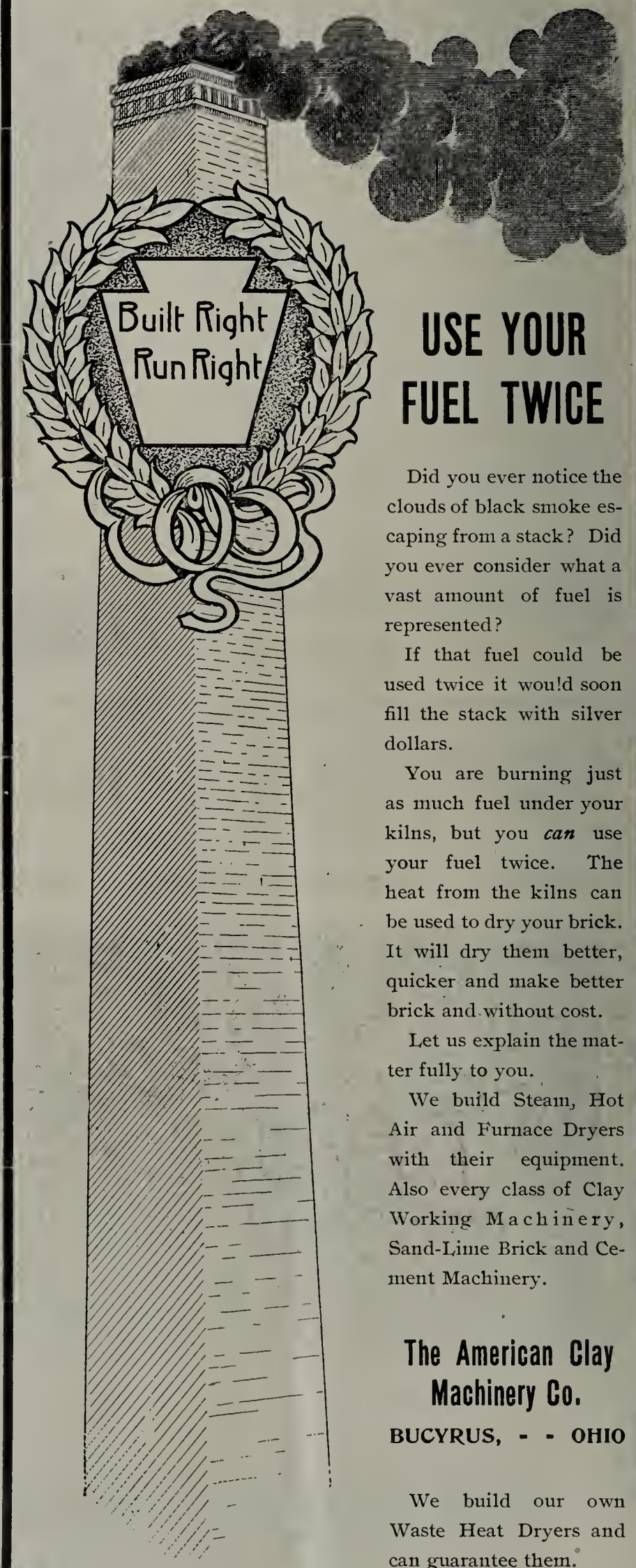

USE YOUR FUEL TWICE

Did you ever notice the clouds of black smoke escaping from a stack? Did you ever consider what a vast amount of fuel is represented?

If that fuel could be used twice it would soon fill the stack with silver dollars.

You are burning just as much fuel under your kilns, but you *can* use your fuel twice. The heat from the kilns can be used to dry your brick. It will dry them better, quicker and make better brick and without cost.

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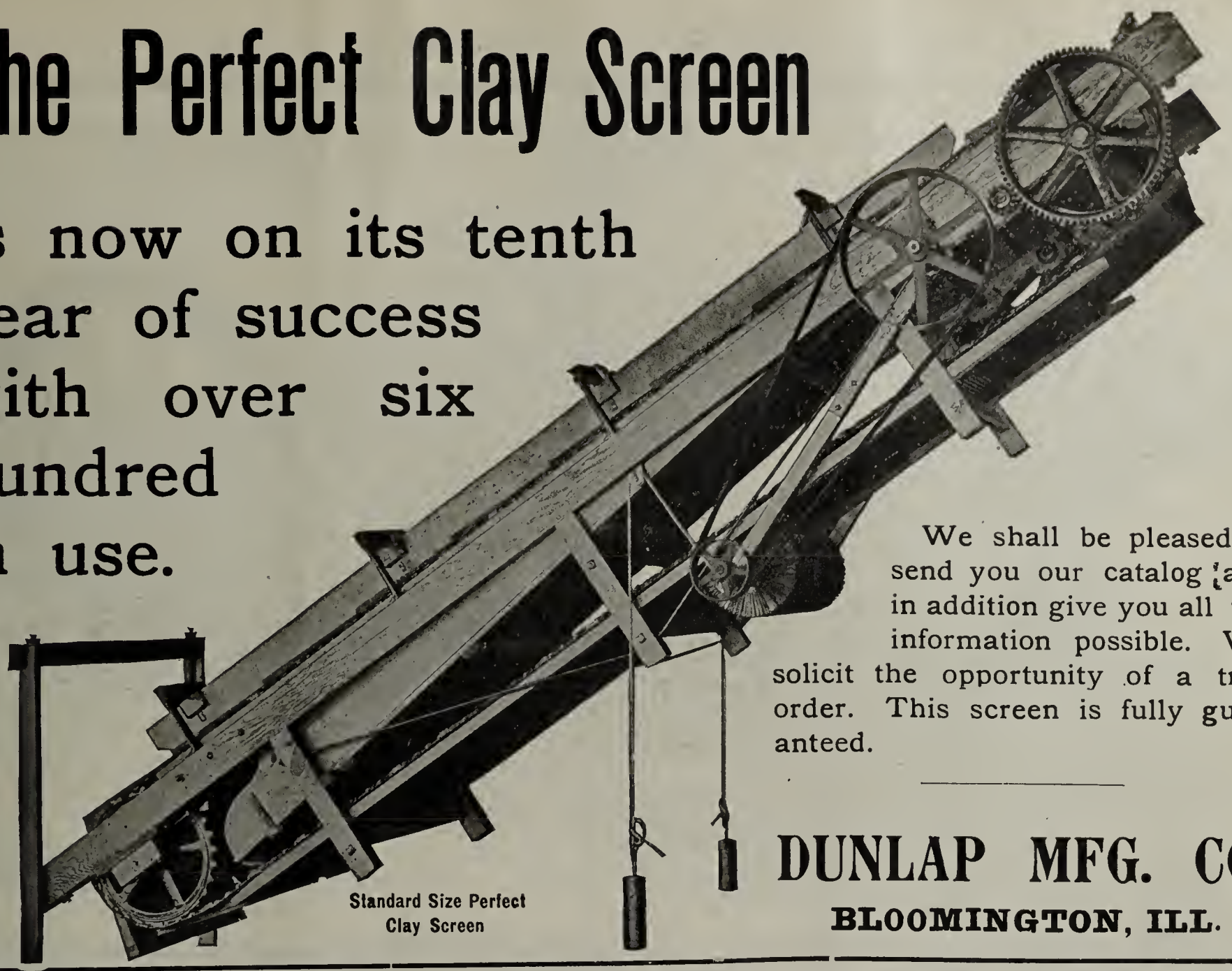
Is now on its tenth year of success with over six hundred in use.



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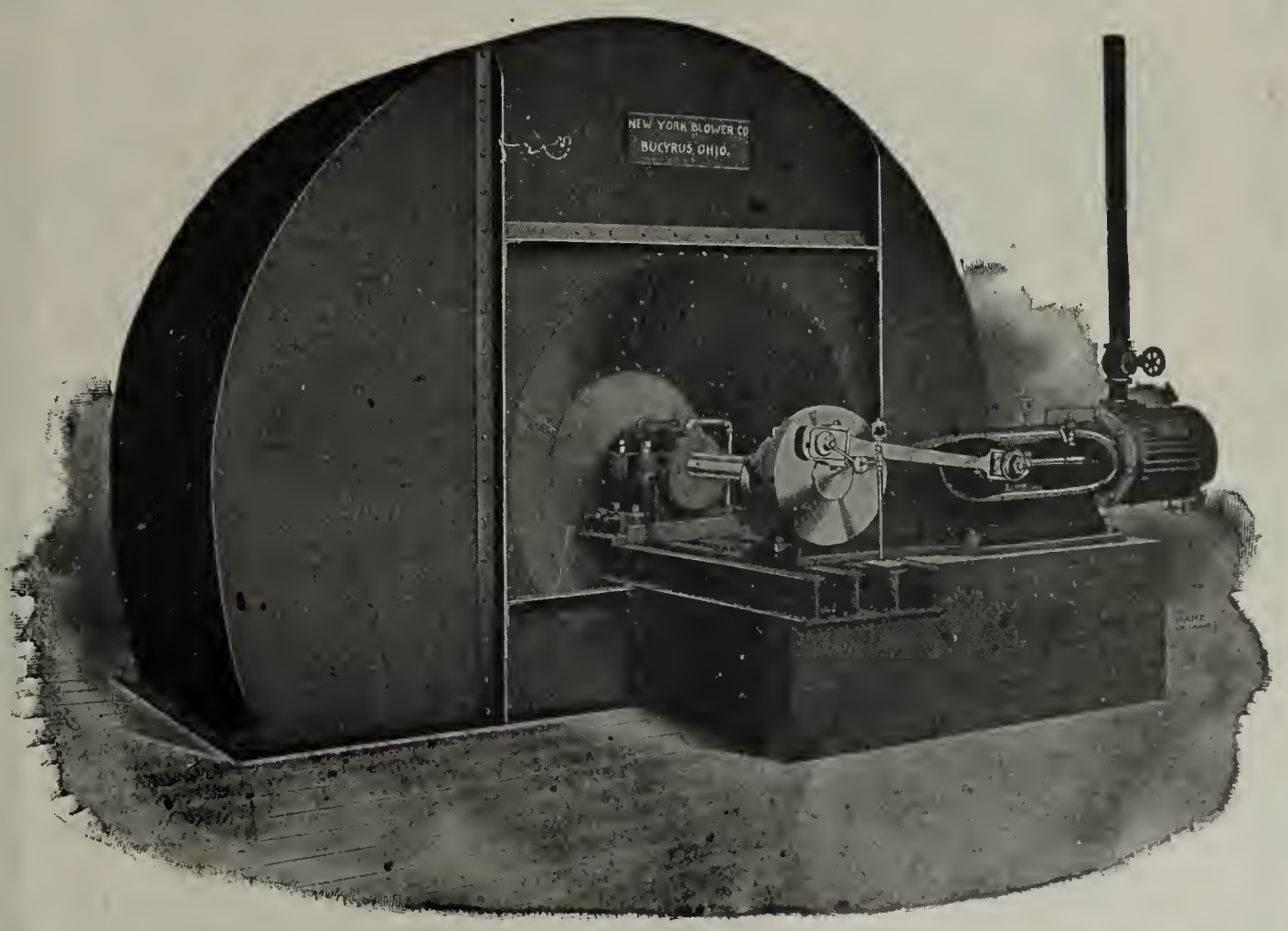
We can show a clean record and a long record of Waste Heat Dryers all over the country.

Our Waste Heat Dryers shorten time of burning, save coal, increase capacity, help the color of brick.

Write for our catalogue No. 54 on Waste Heat Dryers.

We also furnish fans for forceddraft on kilns, for water smoking, for hot floors. We furnish steam coils for utilizing exhaust steam. Write us.



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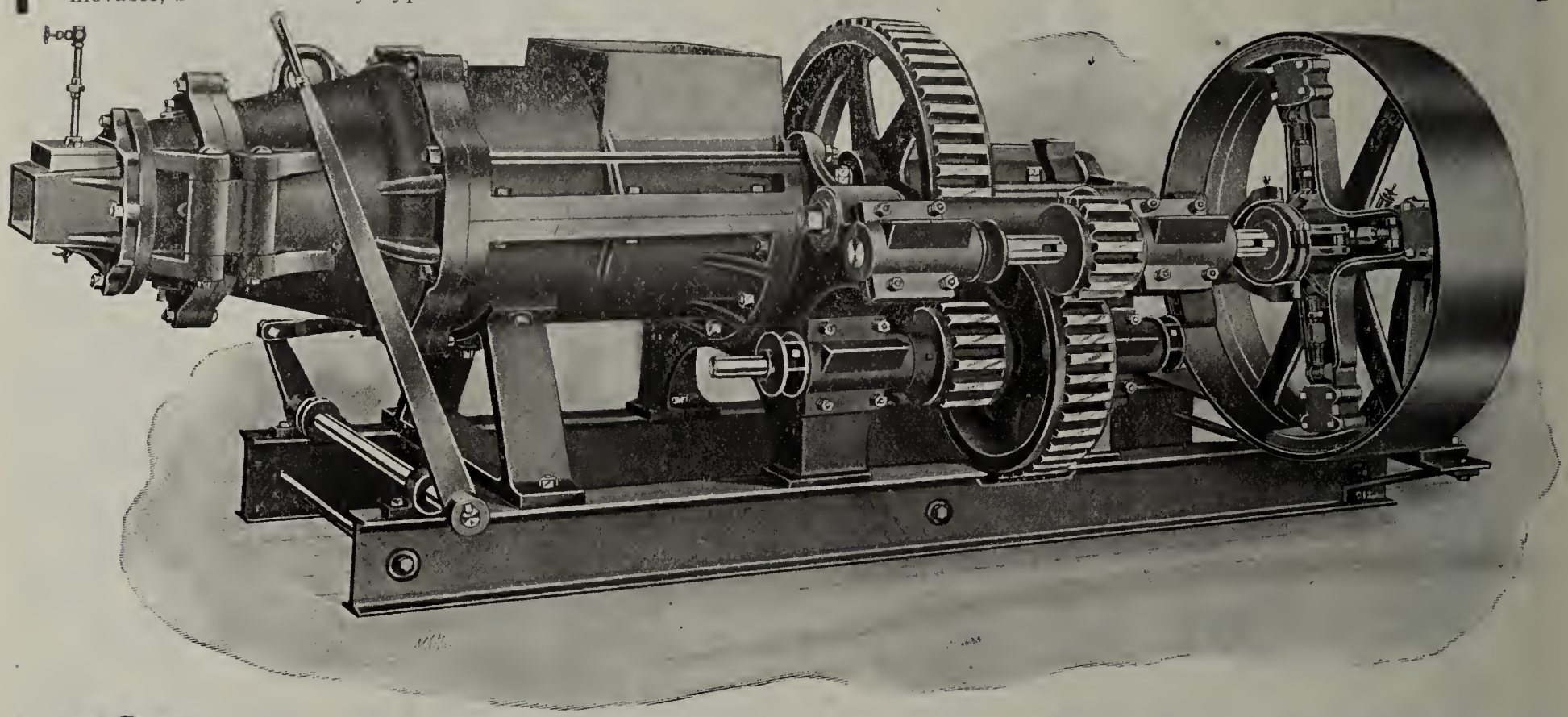

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We build other machines, larger and smaller capacity, same quality. We build everything needed to make clay products. Also Dryers that we can guarantee. Write for catalog.

THE AMERICAN CLAY MACHINERY CO.
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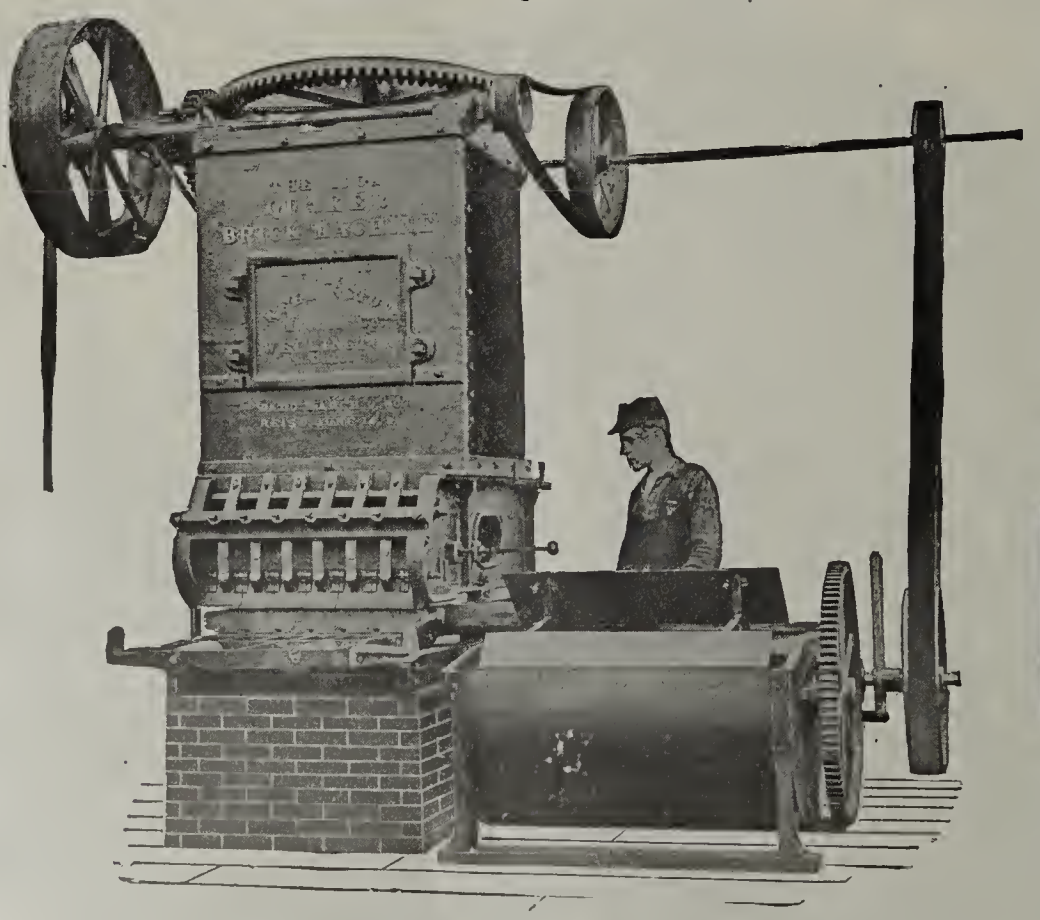
THE NEW IRON STEAM POWER "QUAKER"

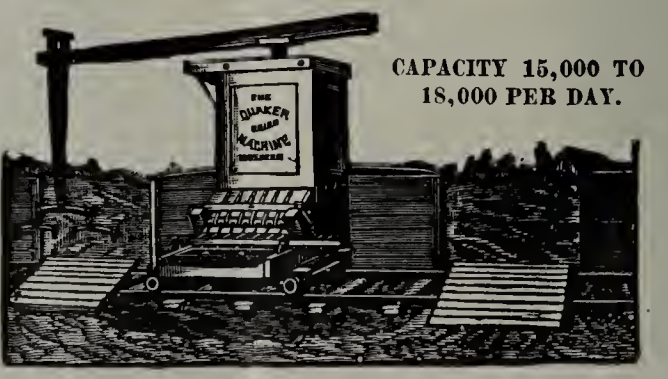


Over 500 "Quakers" in use, both Horse and Steam Power, now made entirely of Iron and Steel. I have the best, simplest and cheapest Mould Sanding Machine on themarket. With my Roller-Bearing Brick Barrows you can wheel 15 per cent. more brick and do it as easily. Order one subject to approval.

ALL OTHER SUPPLIES.

Send for Catalogue.

The BEST for the least money.



CAPACITY 15,000 TO 18,000 PER DAY.

The **NEW IRON HORSE-POWER QUAKER** is indeed a model machine; it is the best machine for equipping small yards at a moderate expense that has ever been put upon the market. It is built for the attachment of steam gearing whenever desired.

It will pay you to see my new catalogue before placing your order.

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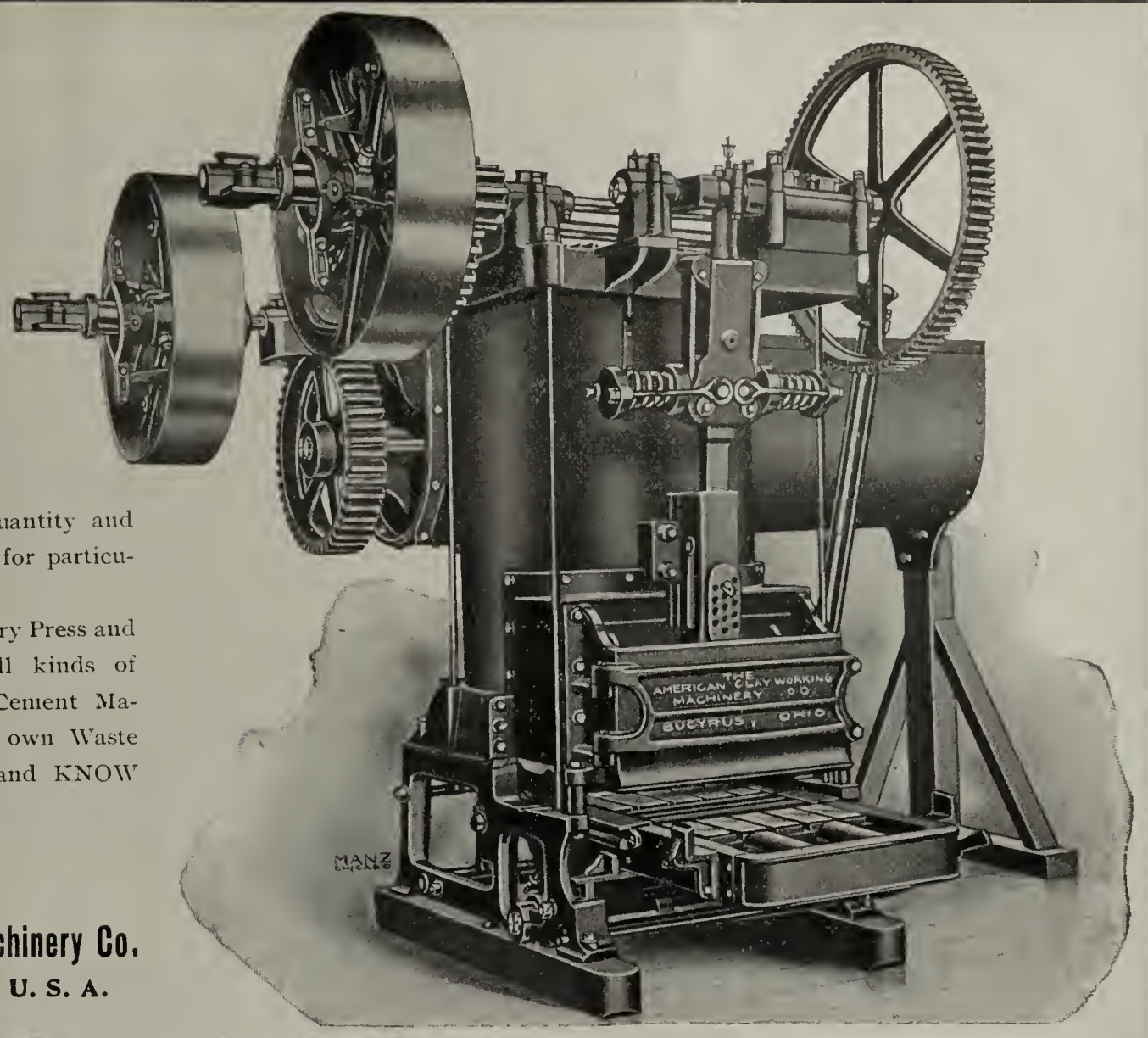
If quality of Machinery and quantity and quality of Brick interest you, write for particulars and catalog.

We build Soft Mud, Stiff Mud, Dry Press and Sand-Lime Brick Machinery. All kinds of Dryers of Quality. Pottery and Cement Machinery. Remember we build our own Waste Heat Dryers in our own shops and KNOW their quality to be the best.



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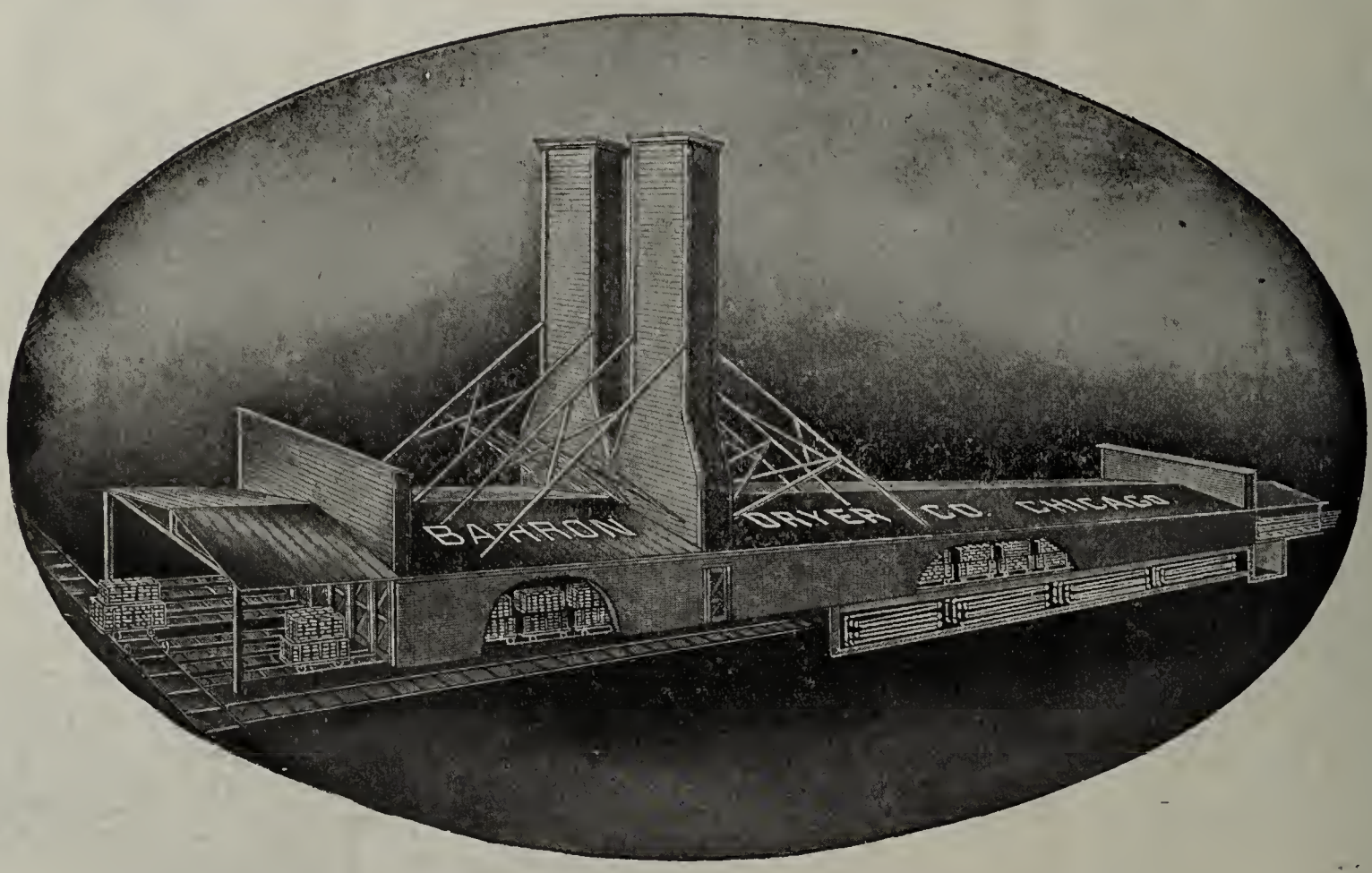

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This is true of them, what of your case? Why adhere still to antiquated methods subjected to weather limitations. Determine to install the most effective drying system in existence and apply for information and quotations to the

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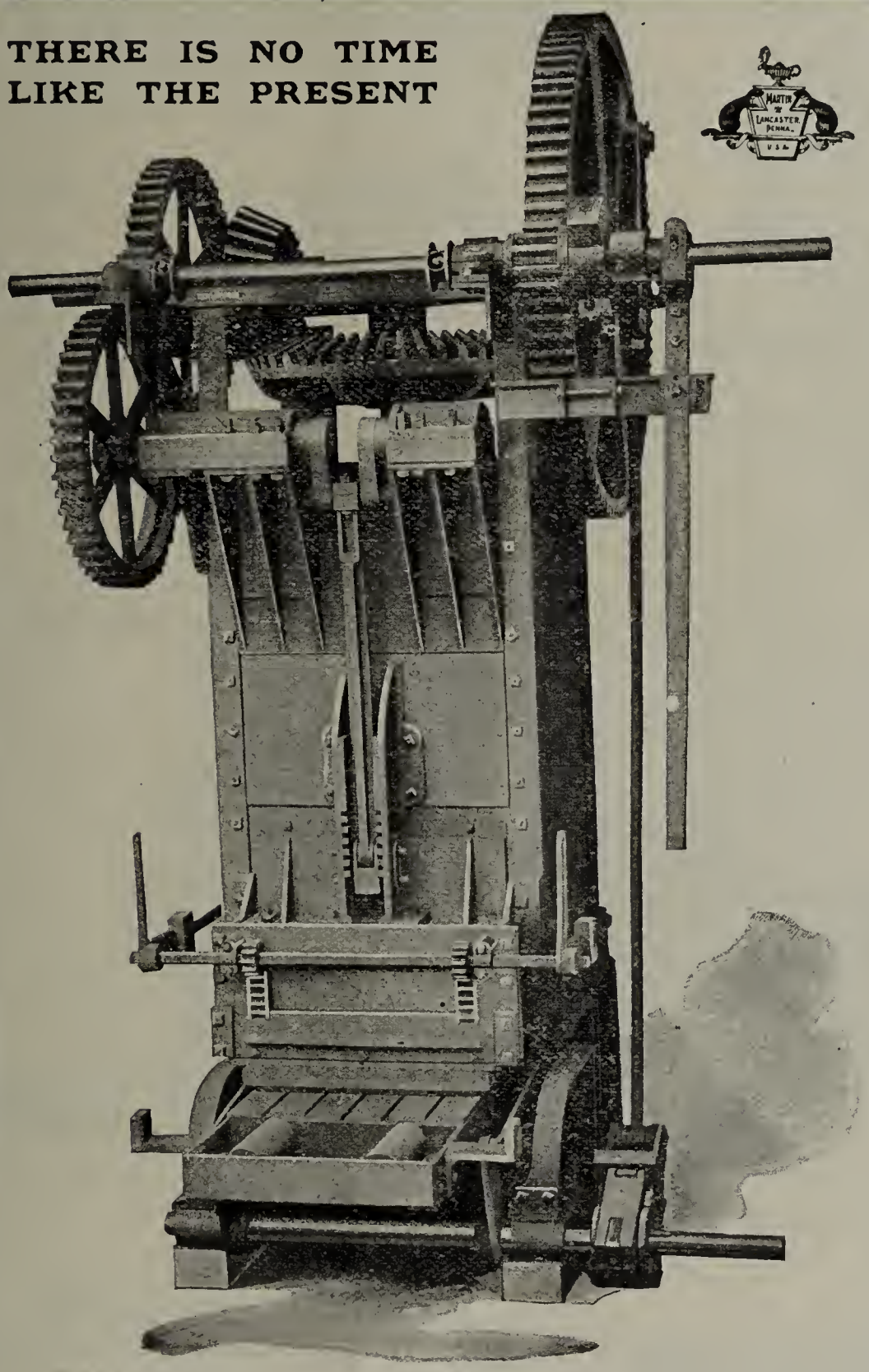

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All Iron and Steel

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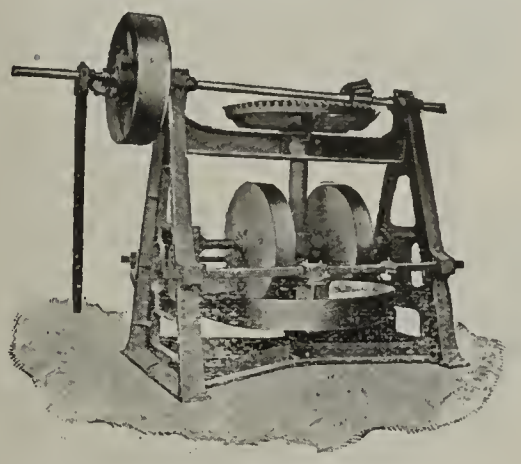
BRICK MACHINERY



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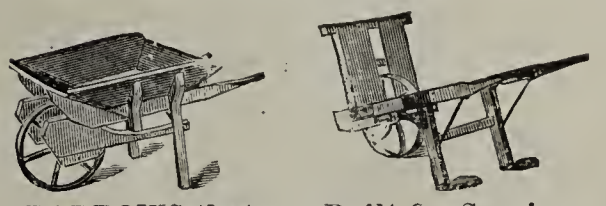

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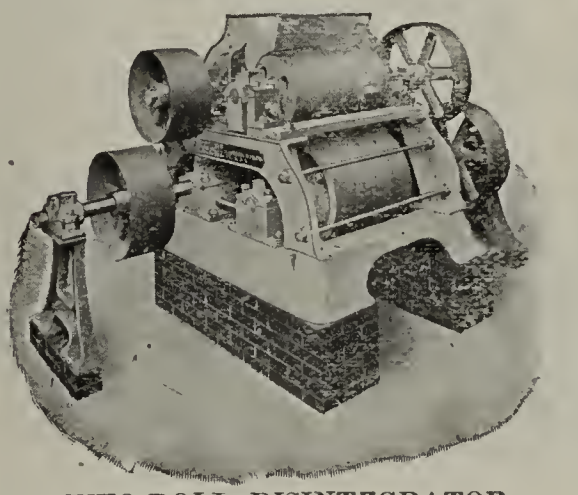

TWO-ROLL DISINTEGRATOR

TRUCKS

The "MARTIN SYSTEM" of drying and handling of brick are of a modern type. No clay is too tender to be successfully handled. We shall be glad to tell you more if you would like. . . . . .

SAND DRYERS

THE HENRY MARTIN
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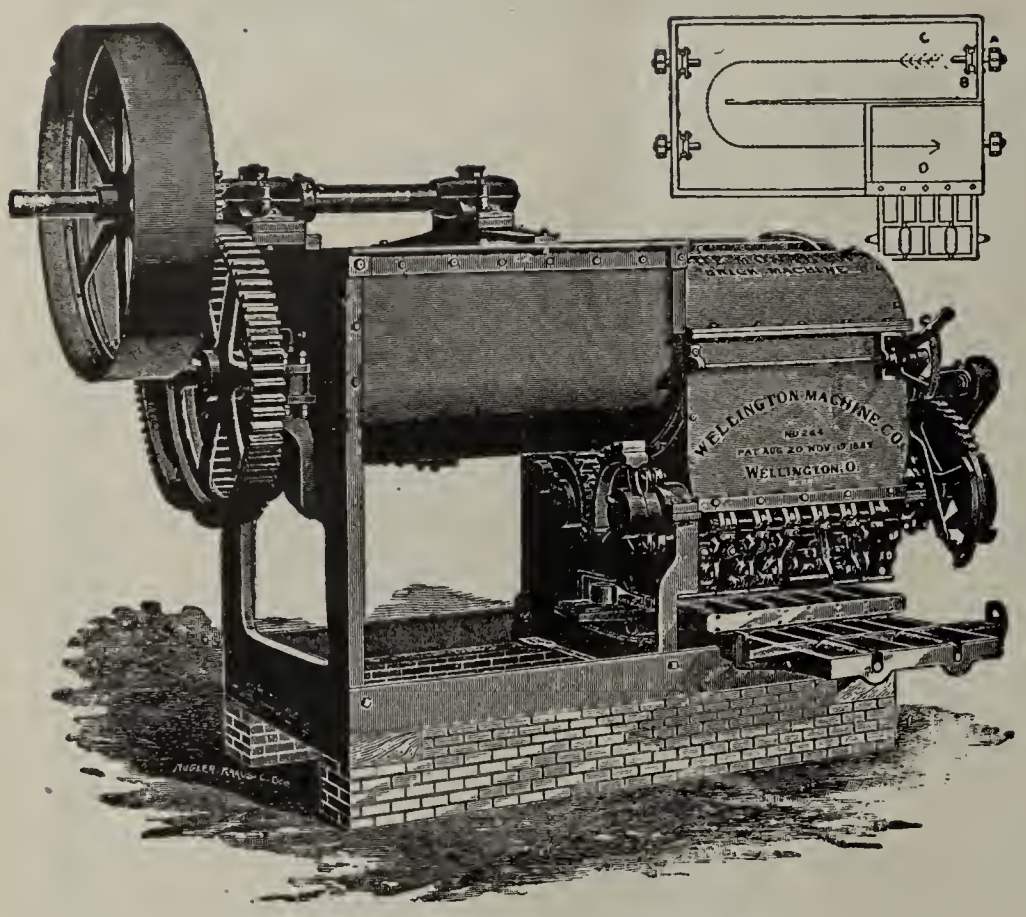
CLAY WORKING ENGINEERS

LANCASTER, PENNA., U. S. A.

"We Furnish Everything a Brickmaker Needs."



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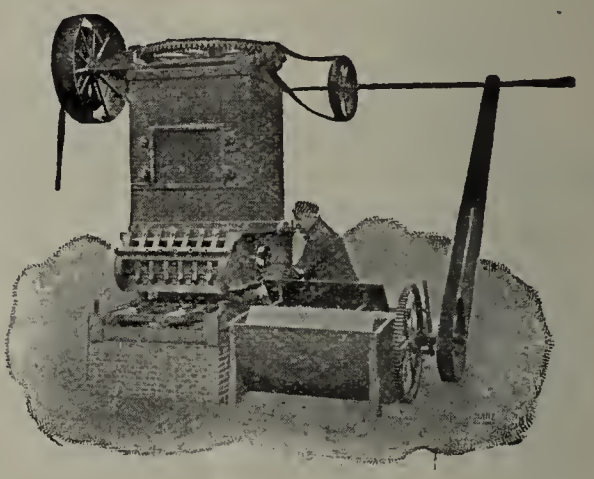
Capacity, from 30,000 to 50,000

BRICK and TILE MACHINERY



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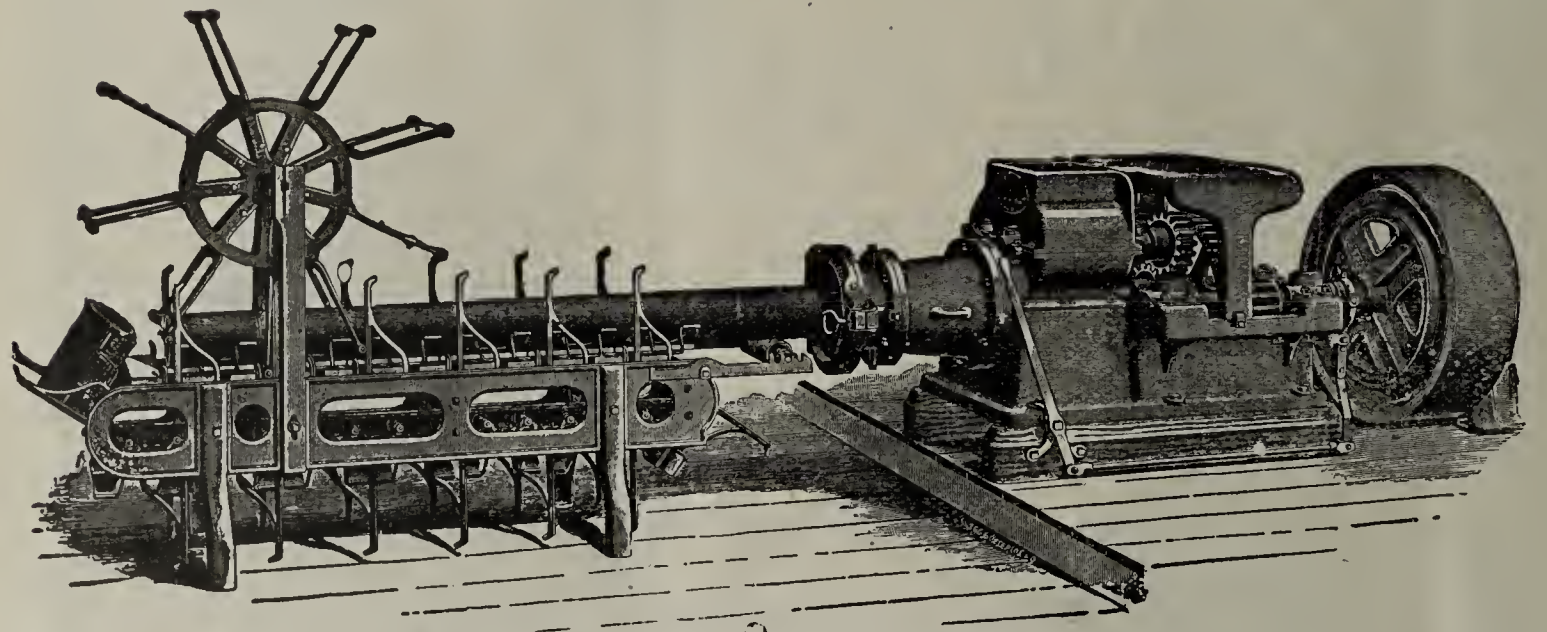

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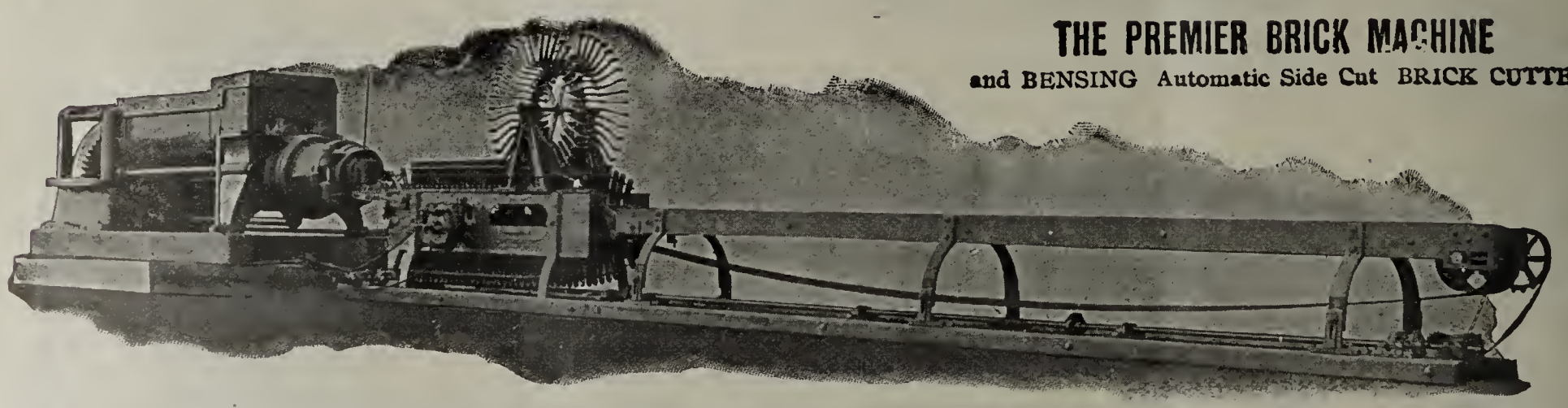

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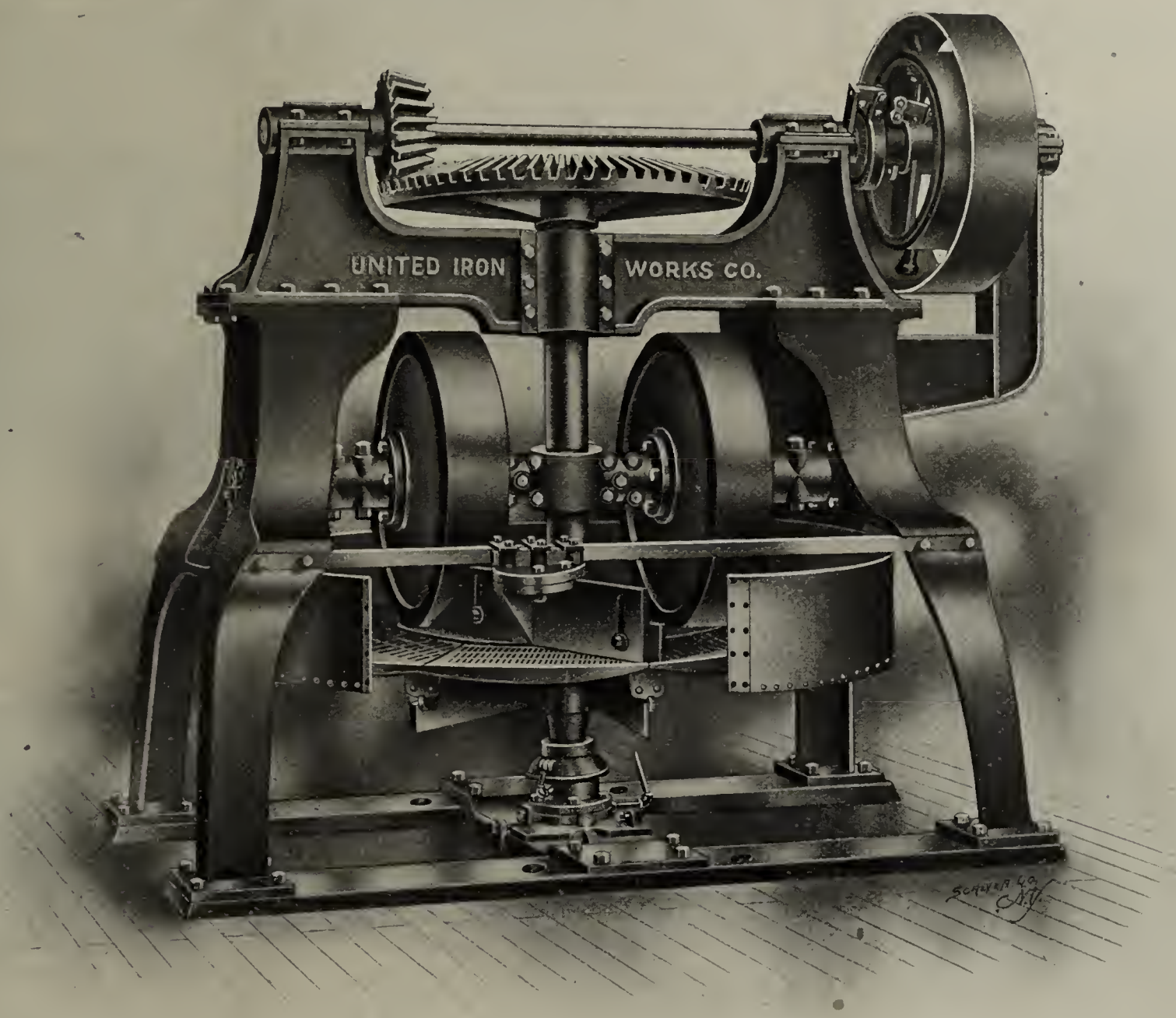
The Heaviest and Most Substantial Dry Pan on the Market



HAS stood the test of years of hard service. For use in the West the saving of freight alone over Eastern products is more than 10% of the first cost, and even this PRICE is LESS than our competitors. We also manufacture a DRY PRESS equally as good as our DRY PAN. A full line of BRICK CARS too. Repairs for all standard clay working machinery kept in stock at plant at Cherryvale, Kansas. Write us before ordering. Address all correspondence to

General Offices: Springfield, Mo.

United Iron Works Co.

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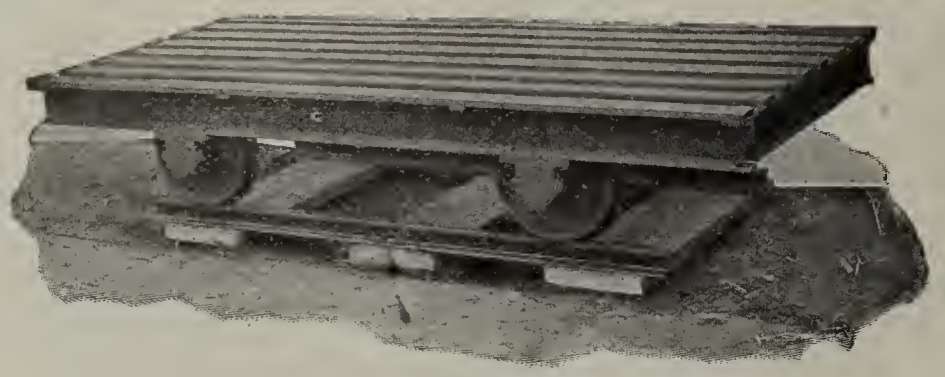

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STEEL DECK CAR, CHANNEL FRAME.
For Drying Brick, Sewer Pipe, Etc.

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FLAT CAR, WOODEN DECK.
For Brick, Tile, Etc.

No. 52.
TRUNION DUMP CAR.
For Handling Coal, Sand, Ashes, Etc.

The Cleveland Car Company

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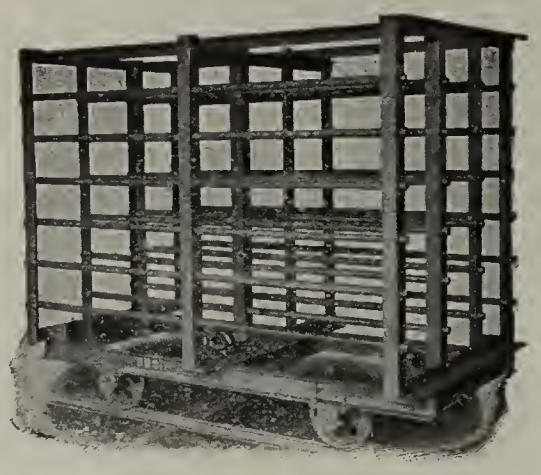
Designers and Builders of

Complete Equipment for Narrow Guage Railroads

No. 50.
ONE SIDE DUMP CAR.
For Dumping Into Dry Pans, Disintegrators and Crushers.



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For Use With Coke Oven, Furnace and Cupola Block.

Dryer Cars of Every Description, Dump Cars, Turn Tables, Transfer Cars, Switches, Frogs, Rails, Etc.

Overhead Trolleys, Kiln Doors, Furnace Fronts, Grate Bars and Brick Barrows : : : :

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Adapted to Handling Coal, Shale, Sand, Etc.

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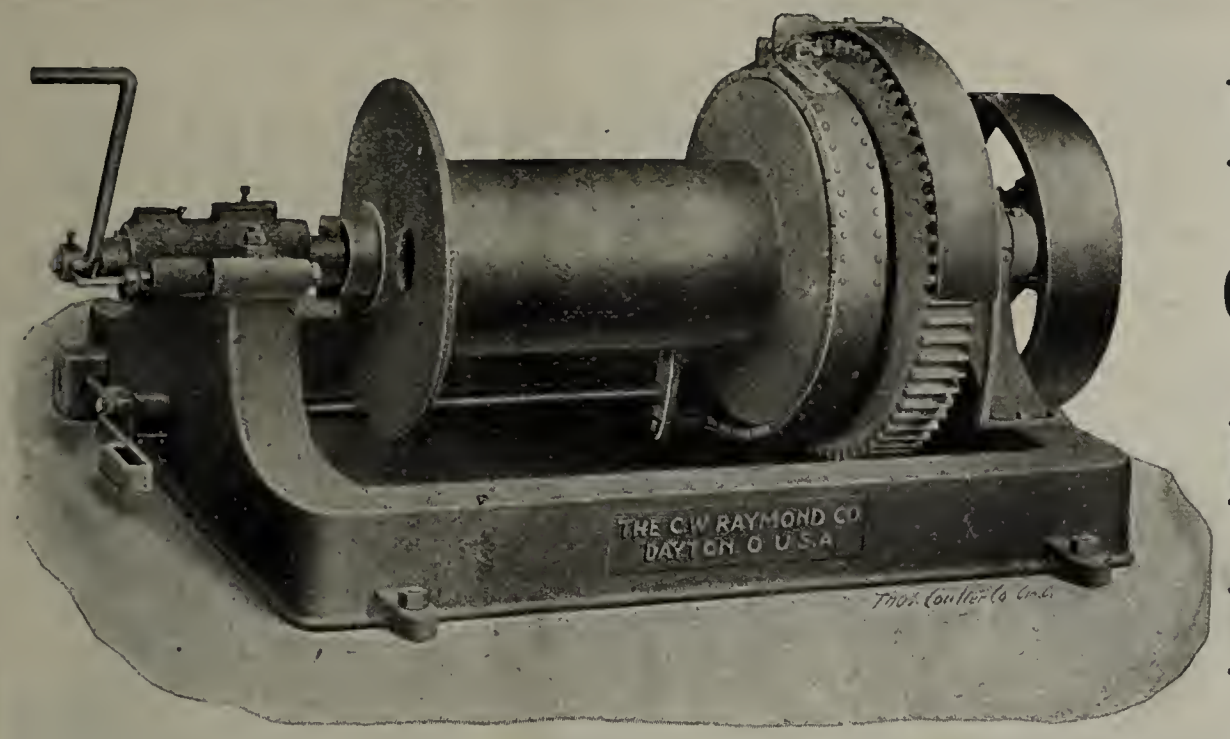


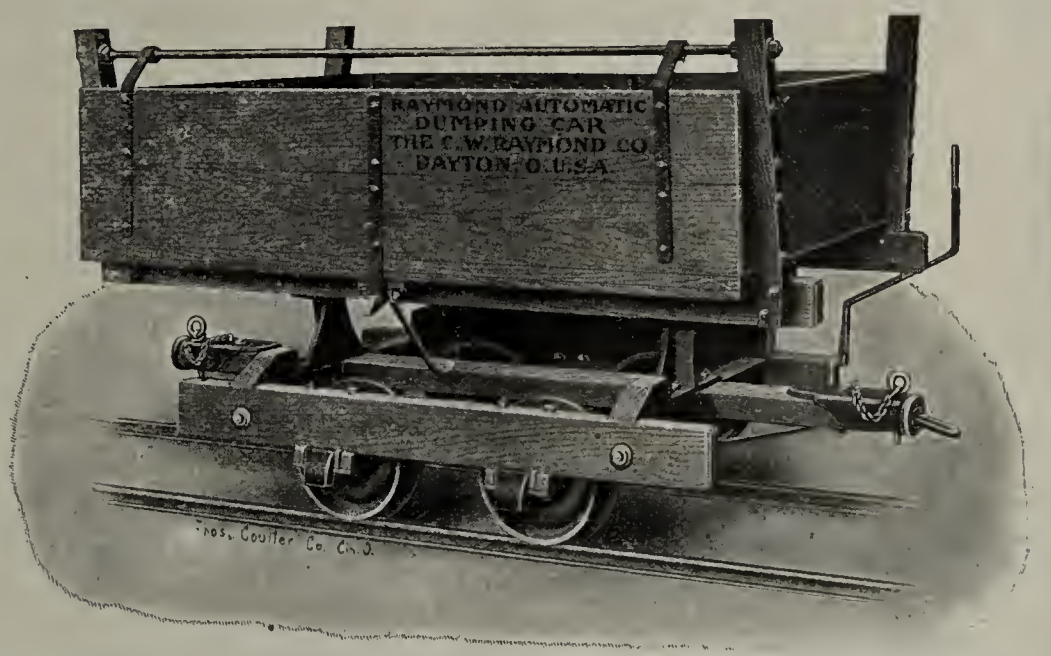
Raymond Gear *and* Friction Hoist

Can also be furnished bevel geared or direct connected with a

Ten Horse-Power Verticle Engine

Installation inexpensive. Cost of operation less than by any other method. Both Labor and Time Saved. No repairs to pay for. Our Engineers can design a hoist and car system of haulage to meet your individual requirements.

Raymond Automatic Dumping Cars :::



Absolutely automatic. Is dumped by striking a trip bar on the track. Car both dumps and resets itself. A positive time and money saver. Made either side or end dump.

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The C. W. Raymond Company

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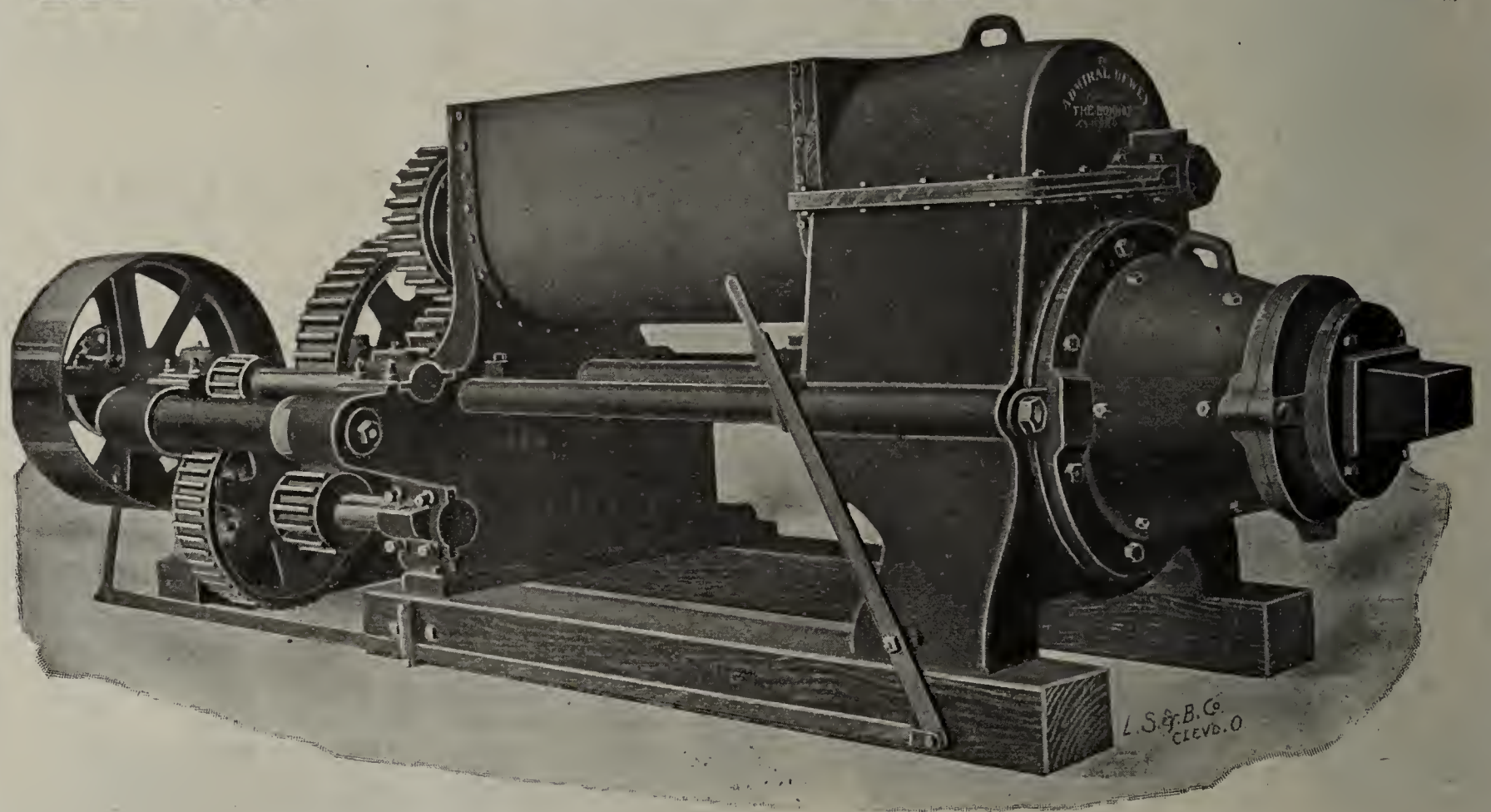
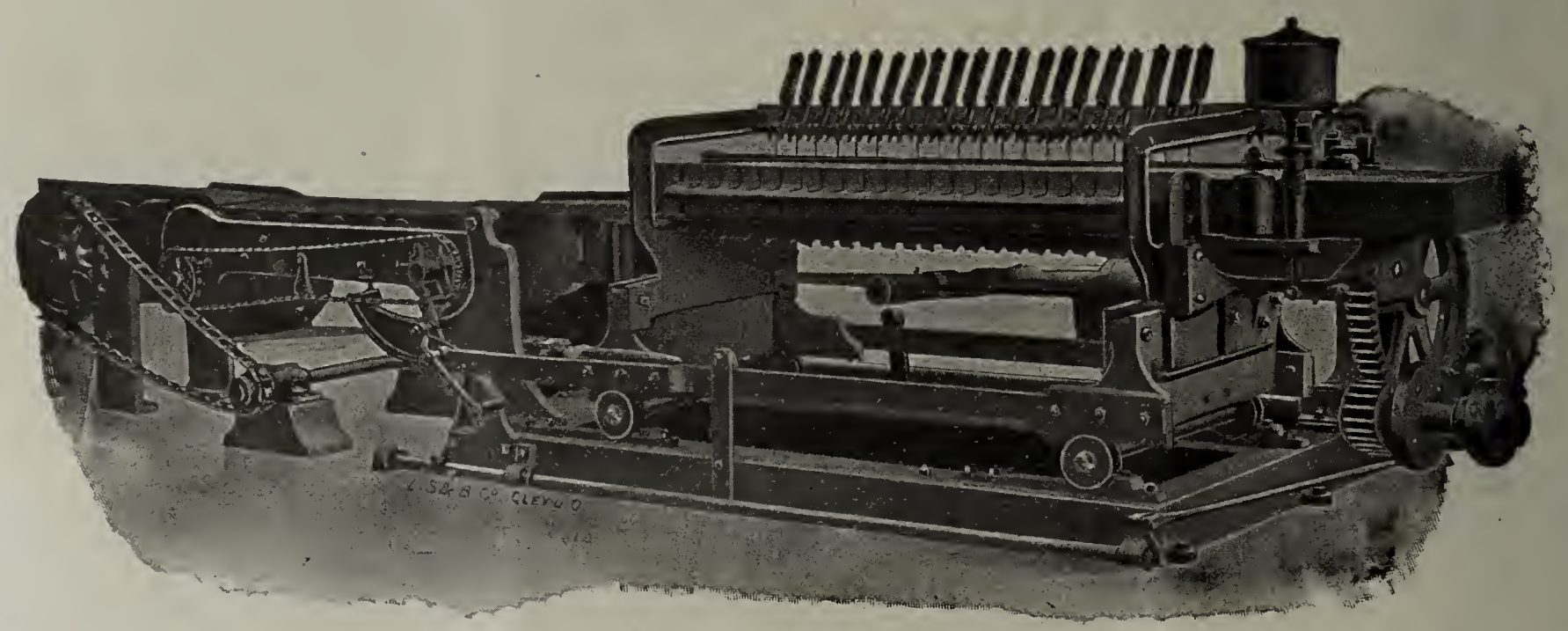
Modern Brick Machinery



SPECIAL COMBINED BRICK MACHINE AND PUG MILL 100,000 daily capacity.
AUGER BRICK MACHINES 10,000 to 100,000 capacity, five sizes.



AUTOMATIC SIDE CUT TABLE. Simple, positive, durable.

COMPLETE EQUIPMENTS FOR BRICKMAKERS. *ASK FOR CATALOGUE*

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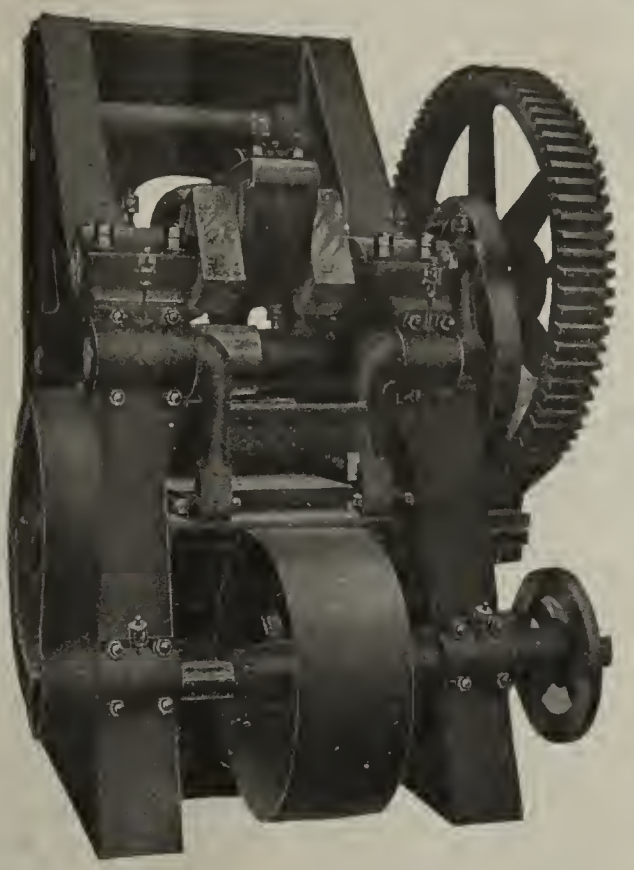
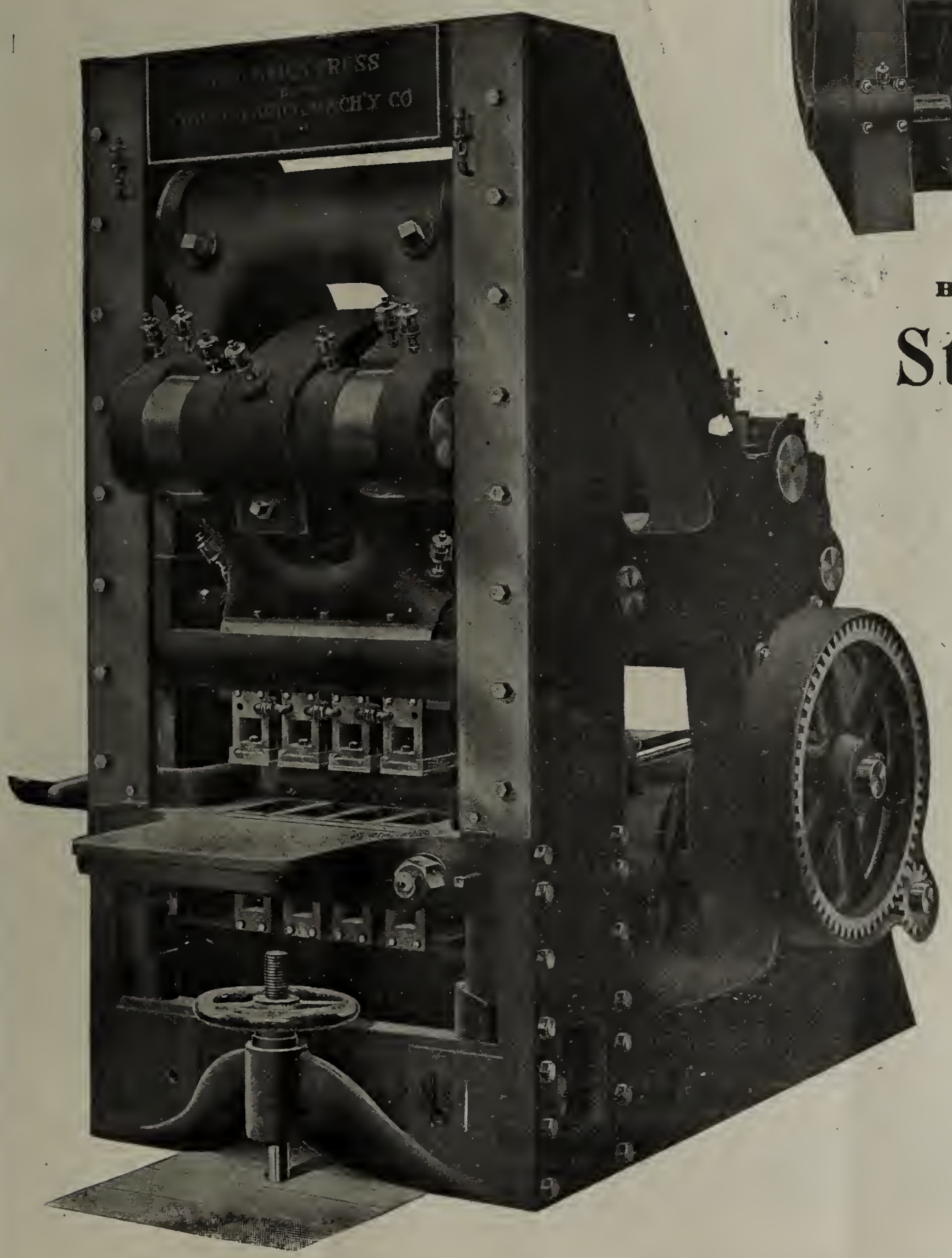
—WESTERN AGENTS—

CHICAGO BRICK MACHINERY CO., - - 77 Jackson Boulevard, Chicago, Ill.

NEW MODEL BERG BRICK PRESS



Back View.



Still in the Lead

AND

One Step Further Forward

Even stronger than ever and all self-contained. Greater pressure and fewer working parts than any other machine. Simple, massive, compact. Running mechanism placed in rear, as shown in upper cut, enabling this machine to be SHIPPED IN ONE PIECE.

MANUFACTURED BY

ANDERSON FOUNDRY & MACHINE WORKS

Anderson, Indiana.

SOLD BY

CHICAGO BRICK MACHINERY COMPANY

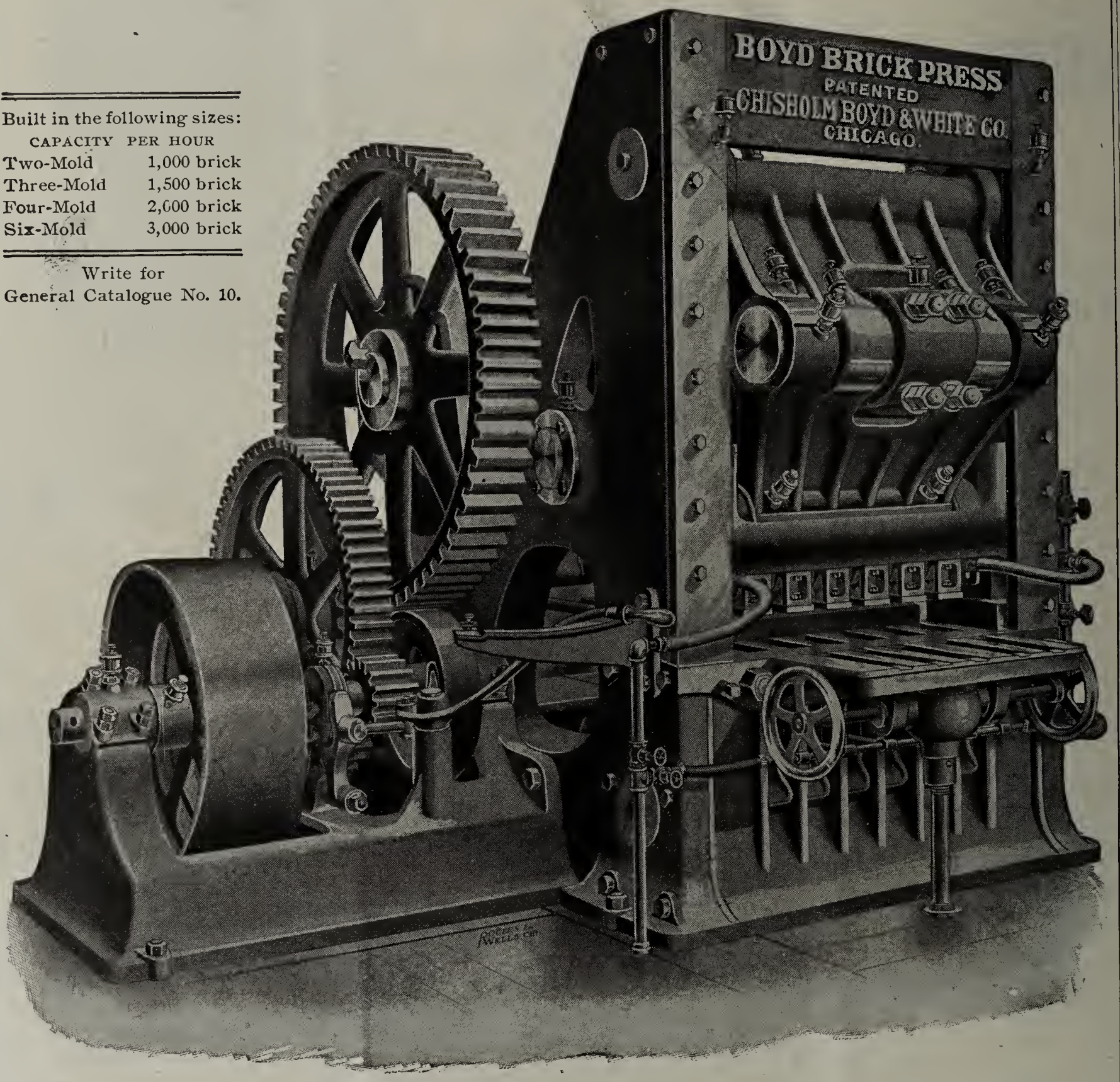
77 Jackson Boulevard, Chicago.

The Boyd Brick Press

Built in the following sizes:

CAPACITY	PER HOUR
Two-Mold	1,000 brick
Three-Mold	1,500 brick
Four-Mold	2,000 brick
Six-Mold	3,000 brick

Write for
General Catalogue No. 10.



Another Record for the Boyd Press:

Six of our SIX-MOLD PRESSES in use on ONE YARD since 1892. Average cost of repairs for each machine One Dollar per year.

THE BOYD PRESS has always been distinguished for originality in design and construction. It will make better brick from clay or shale than can be made from the same material by any other press. It is selected and purchased by the most progressive Brick Makers. The largest and most successful brick plants in the country are using Boyd Presses.

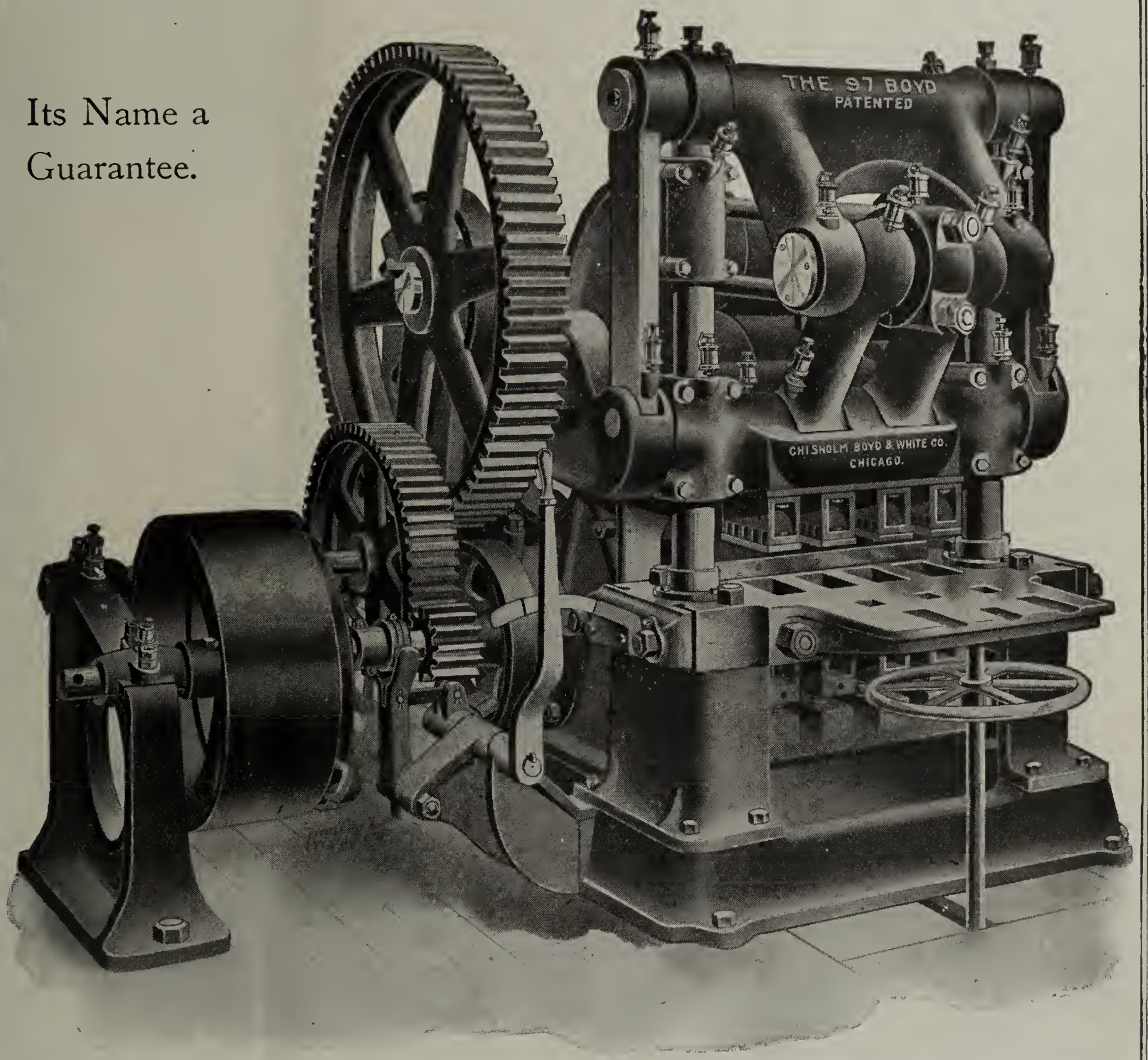
Chisholm, Boyd & White Company

Office and Works, 57th and Wallace Sts. **CHICAGO, ILL.**

The Boyd Brick Press

The '97 Model

Its Name a Guarantee.



THE '97 MODEL BOYD BRICK PRESS has enormous strength and great durability; it is compact; the adjustments are convenient; it operates quietly and smoothly; the workmanship and material are of the best; the design ingenious, and shows the most perfect application of scientific and mechanical principles to the art of brickmaking.

THE BOYD is the only Brick Press provided with an independent adjusting device for regulating the amount of clay in the molds and the pressure on the brick. This feature positively ensures equal pressure and finish on both sides of the brick, and no granulated or soft centers.

Sent on trial and fully guaranteed. Seventy presses of this pattern now in use. Cannot be broken in pressing brick. Write for descriptive catalogue No. 9.

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Office and Works, 57th and Wallace Sts. **CHICAGO, ILL.**

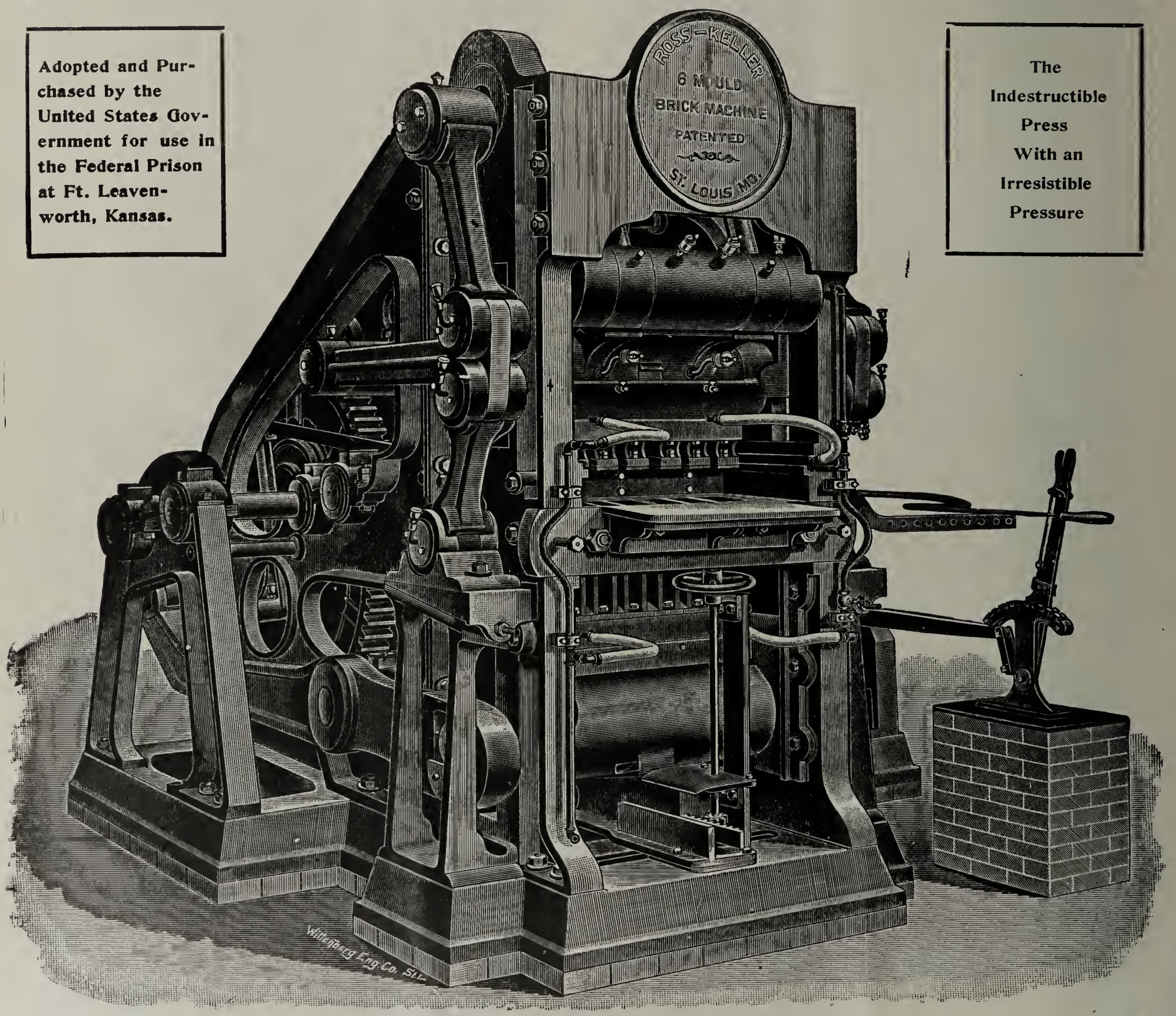
SAND-LIME BRICK MACHINERY

We are building and equipping Sand-Lime Brick Plants complete and we guarantee satisfactory results : : :

We manufacture a full line of Clay & Shale Dry Press Machinery : : : : : : :

Adopted and Purchased by the United States Government for use in the Federal Prison at Ft. Leavenworth, Kansas.

The Indestructible Press With an Irresistible Pressure



For prices and particulars address

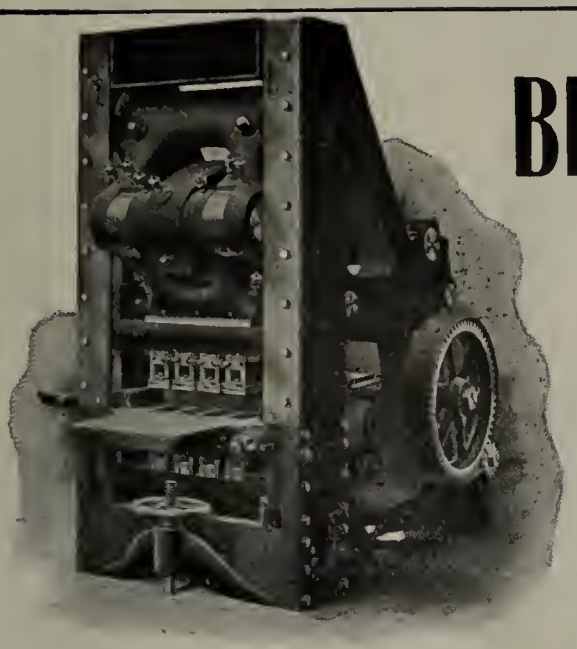
Ross-Keller Triple Pressure Brick Machine Co.

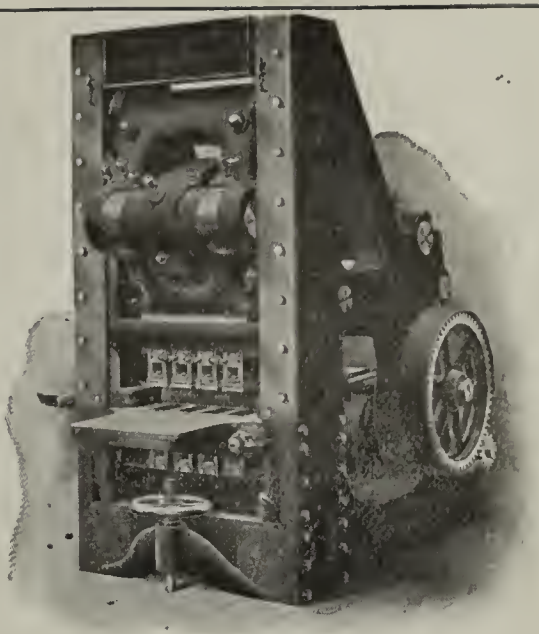
GEO. M. McDOWELL, Sales Agent
for Pacific Coast, Portland, Ore.

FULLERTON BUILDING, ST. LOUIS, MO., U. S. A.

BERG BRICK PRESS

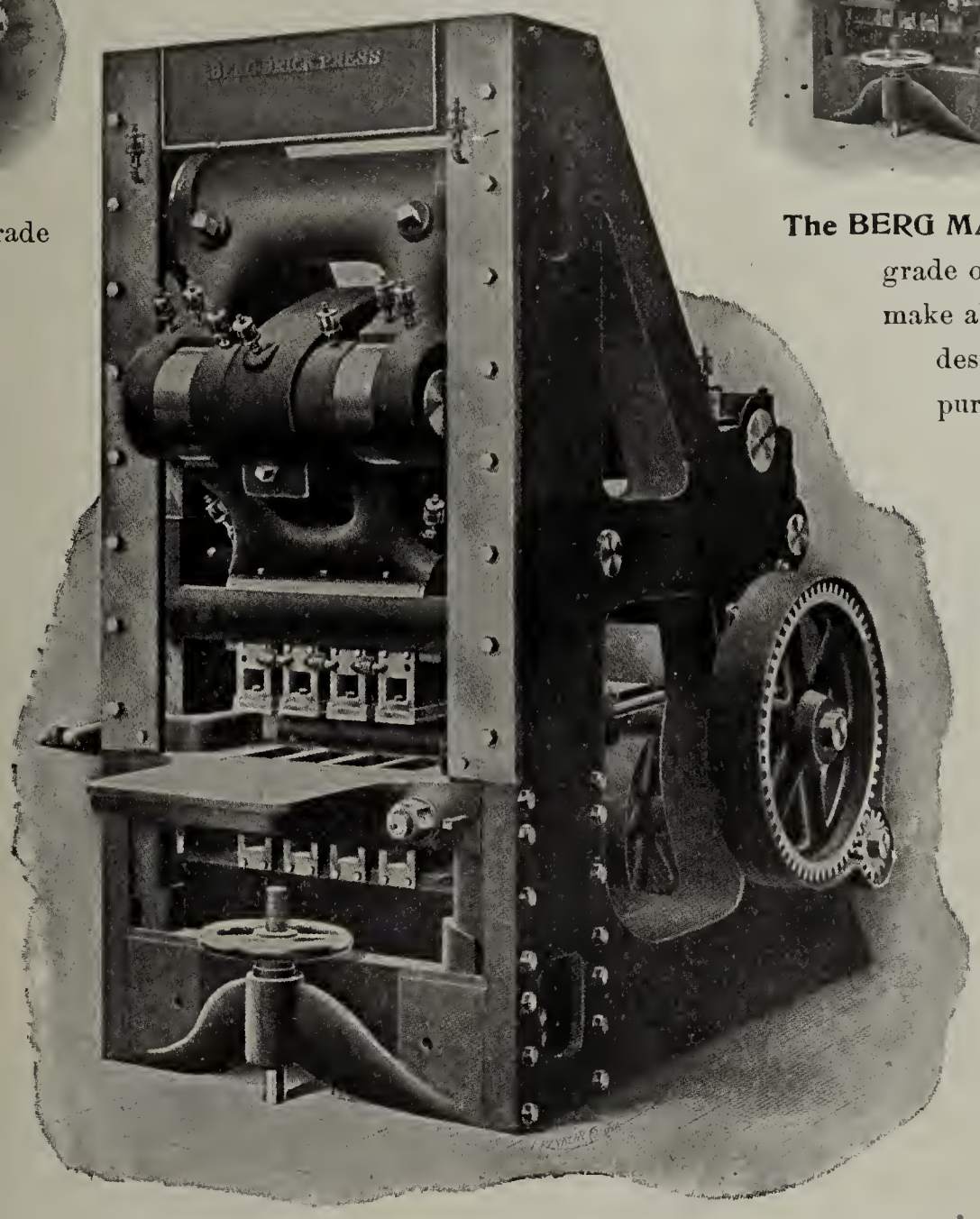
The highest development of the Art of Brickmaking Machinery so pronounced by the United States Government.





The BERG for the highest grade of pressed brick of shale or clay. It makes all kinds of shapes and sizes of brick. Changes from one shape to another can be made in less than an hour's time.

The BERG MAKES the highest grade of fire brick. Can make all kinds of shapes desired for fire-brick purposes.



First-Class Workmanship. Cut Gearing. Fully Warranted.

Three distinct pressures make the brick evenly pressed all through. No granulated centers of the brick.

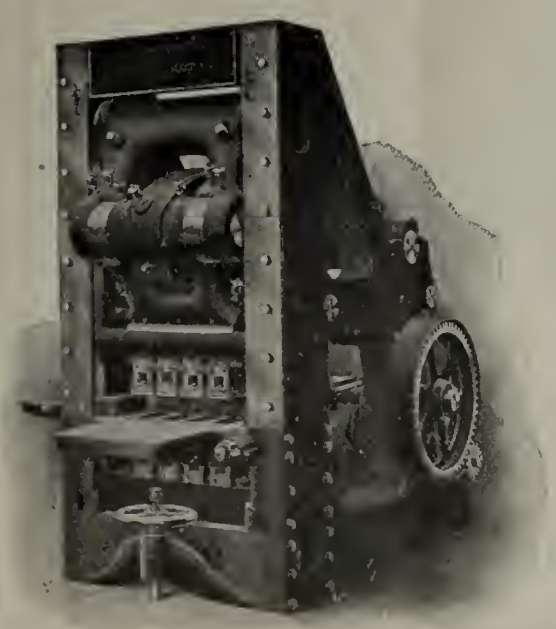
The BERG makes the best sand-lime brick and cheapest because it is the strongest machine and gives the highest pressure. Thirty-five sand-lime plants in United States use the **BERG** Brick Press SUCCESSFULLY.

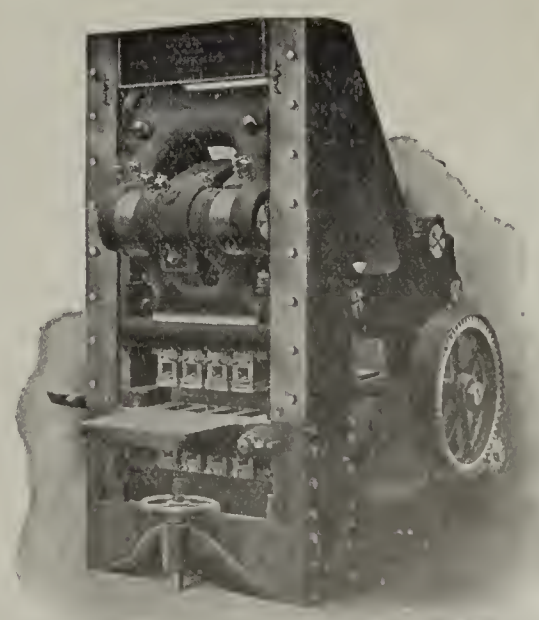
The BERG is the best for sand and cement because of its strong pressure. Uses less cement, makes cheaper brick.

The 1905 Berg Press

Many other steps further forward in improvement and highest grade of material and workmanship, also cut gearing. Fully guaranteed as to its success. Manufactured by its inventor in Toronto, Canada, at the Bertram Engine Works Co. Plans and specifications on the different kinds of plants furnished, also all equipments.

For prices and full particulars, address





A. BERG & SONS

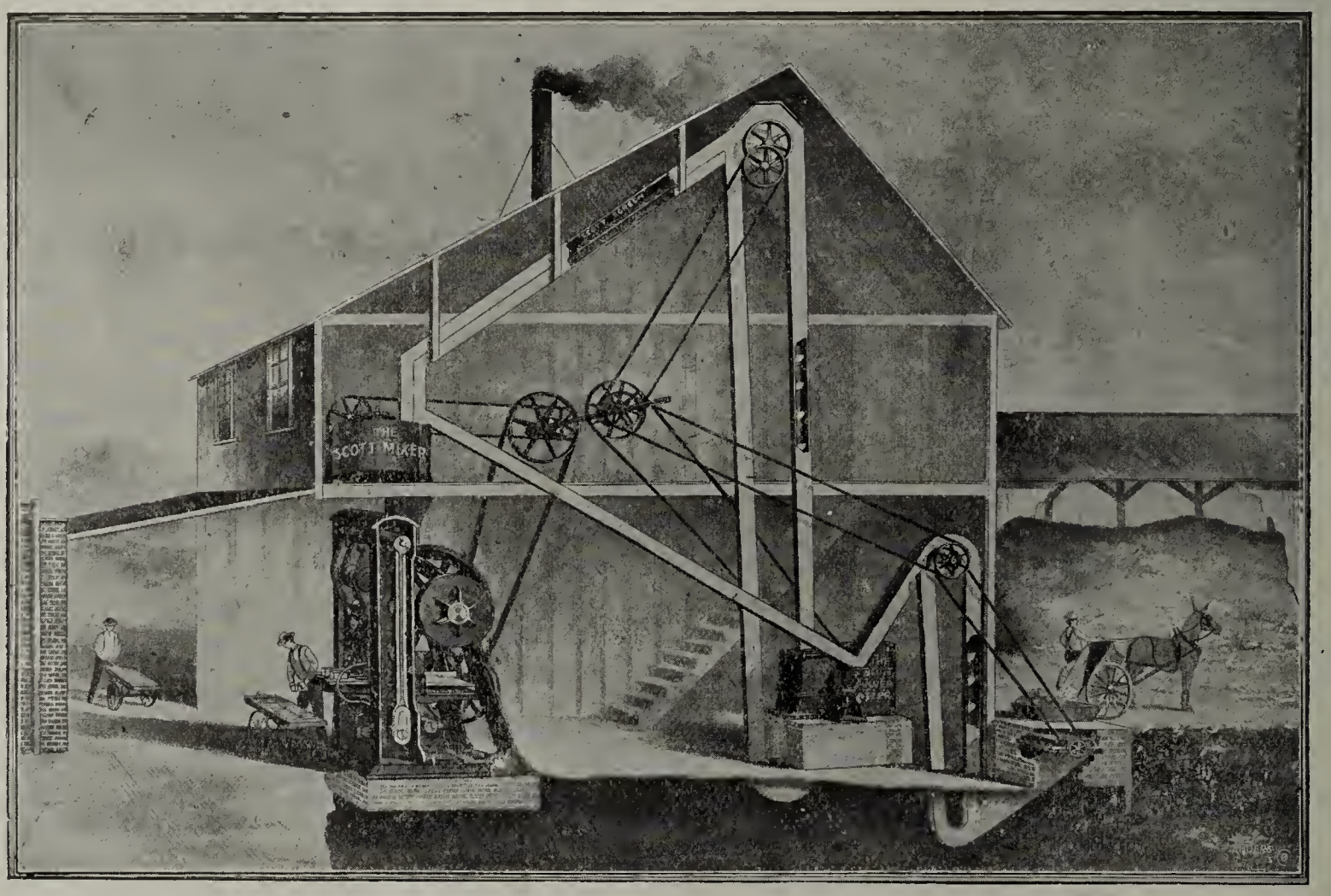
OFFICE: MANNING CHAMBERS

TORONTO, ONT., CANADA

Rojestvensky

certainly was unfortunate, for while he had the knowledge of tactics within himself he was not backed up with the necessary *equipment, enthusiasm, organization.*

In waging our war against competition we claim that in our campaign we know that our facilities for manufacture are the very best; our organization is practically complete, and our enthusiasm—well, you can't imagine how strong that is unless you are operating an Andrus Press.

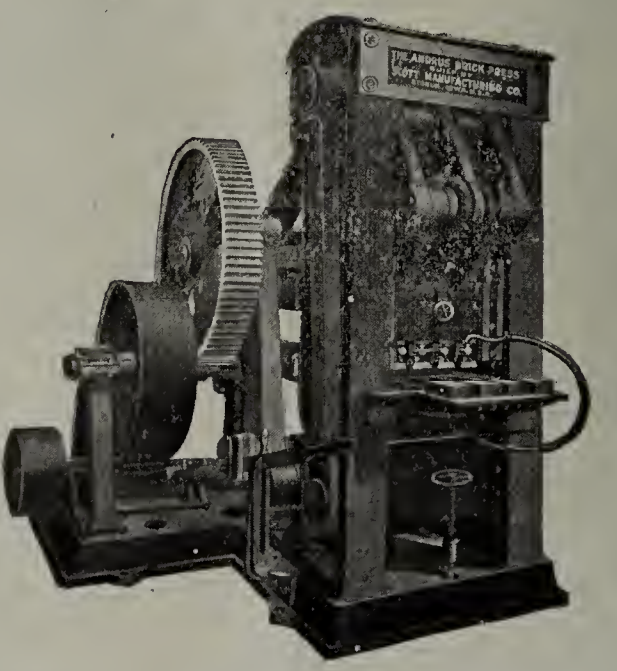


THE SCOTT NOISELESS PLANT.

We Install Complete Plants

Our Drafting Department Is At Your Service.

We cordially invite the brickmaker and capitalist to come to our city and see our presses in operation in the "St. Louis District," which is conceded to be the greatest Dry Press center in the world.



THIS IS THE PRESS THAT SCOTT BUILDS.

SCOTT MANUFACTURING CO.,

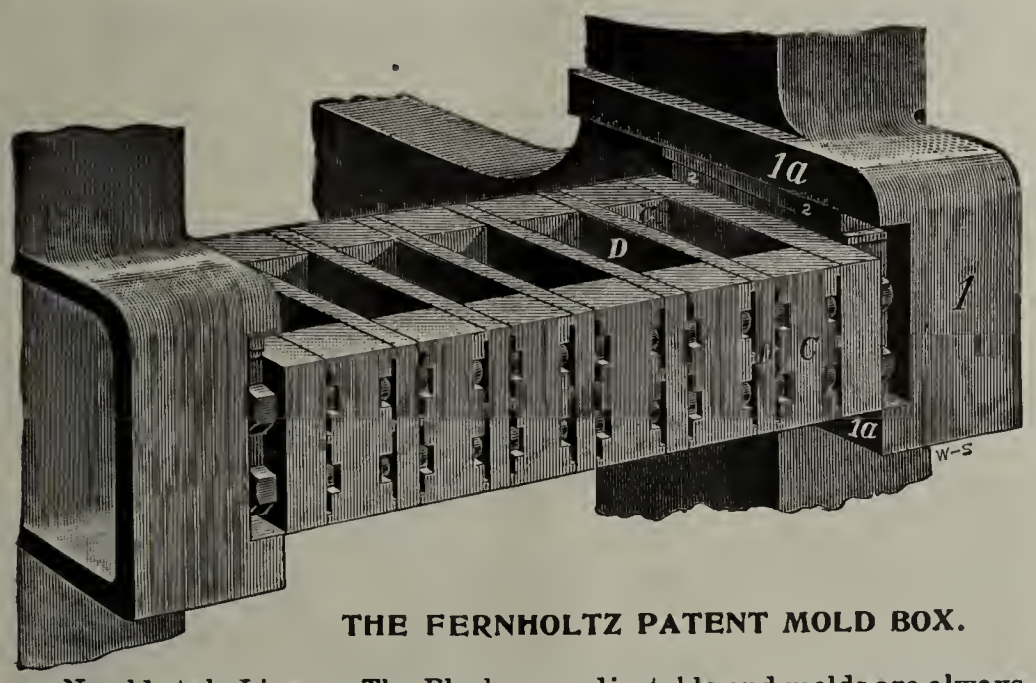
Commonwealth Trust Building, Saint Louis, Missouri.

The Fernholtz Brick Machinery Co.

Manufacturers of

The Celebrated Fernholtz Dry Press

Four mold Press 20,000 daily capacity. Six mold Press 30,000 daily capacity

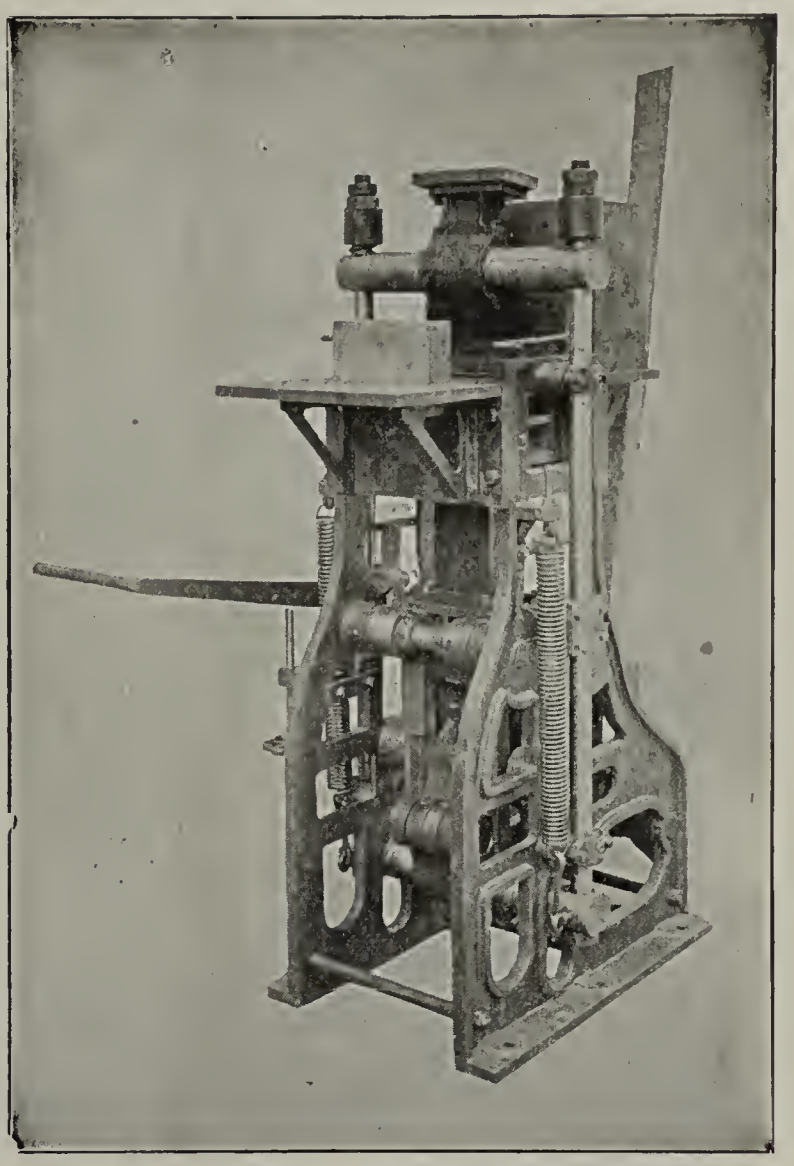


THE FERNHOLTZ PATENT MOLD BOX.

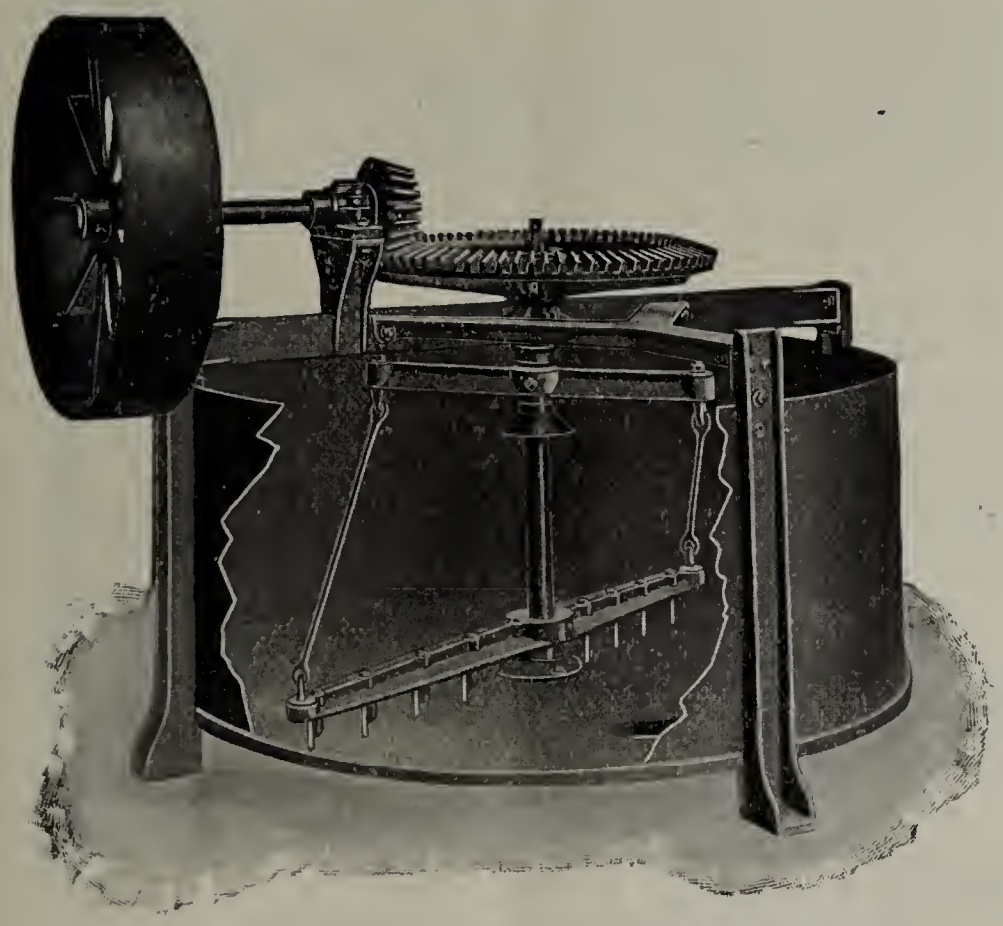
No old style Liners. The Blocks are adjustable and molds are always one size. We have put them in most all makes of Dry Press machines. Easily and quickly adjusted. They are made entirely out of chilled iron, the hardest known metal.

GRATH PATENT HAND POWER PRESS.

Especially adapted for ornamental designs. Any size brick up to 12⅝ inches long, 10 inches wide and 4¼ inches thick.
Brick set into kiln direct from press.



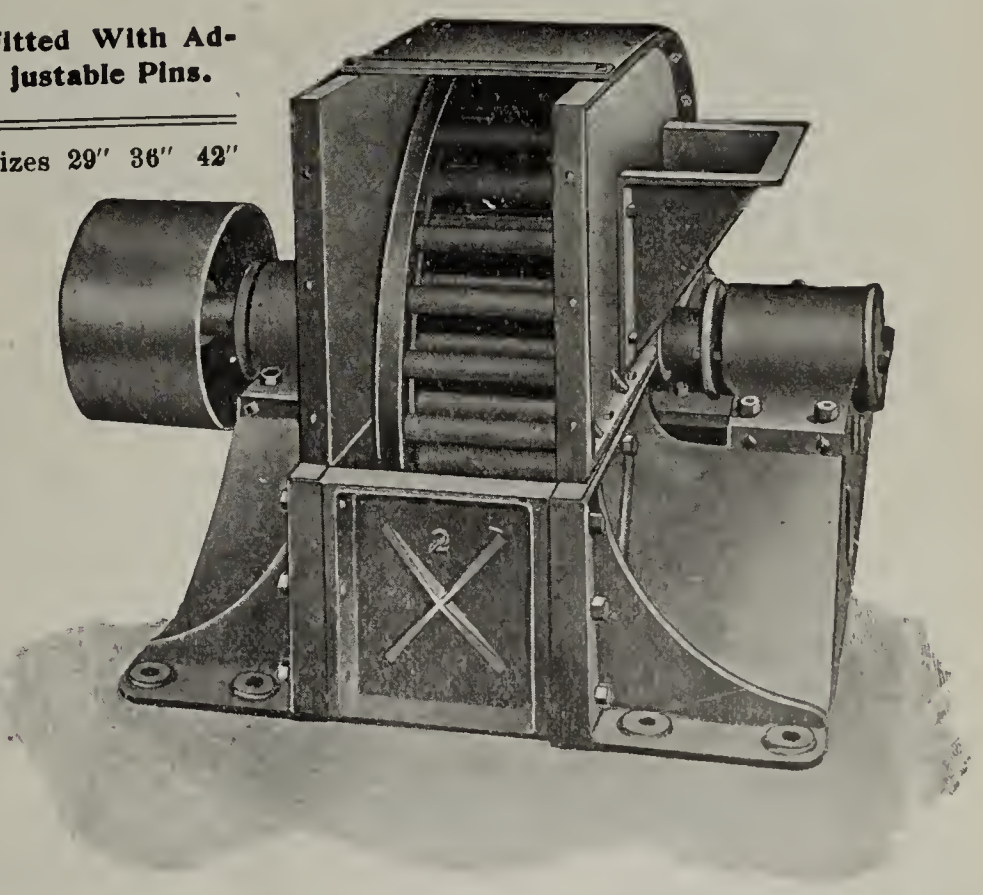
GRATH PATENT HAND POWER PRESS.



A GOOD MIXER IS ALWAYS APPRECIATED.

Fitted With Adjustable Pins.

Sizes 29″ 36″ 42″

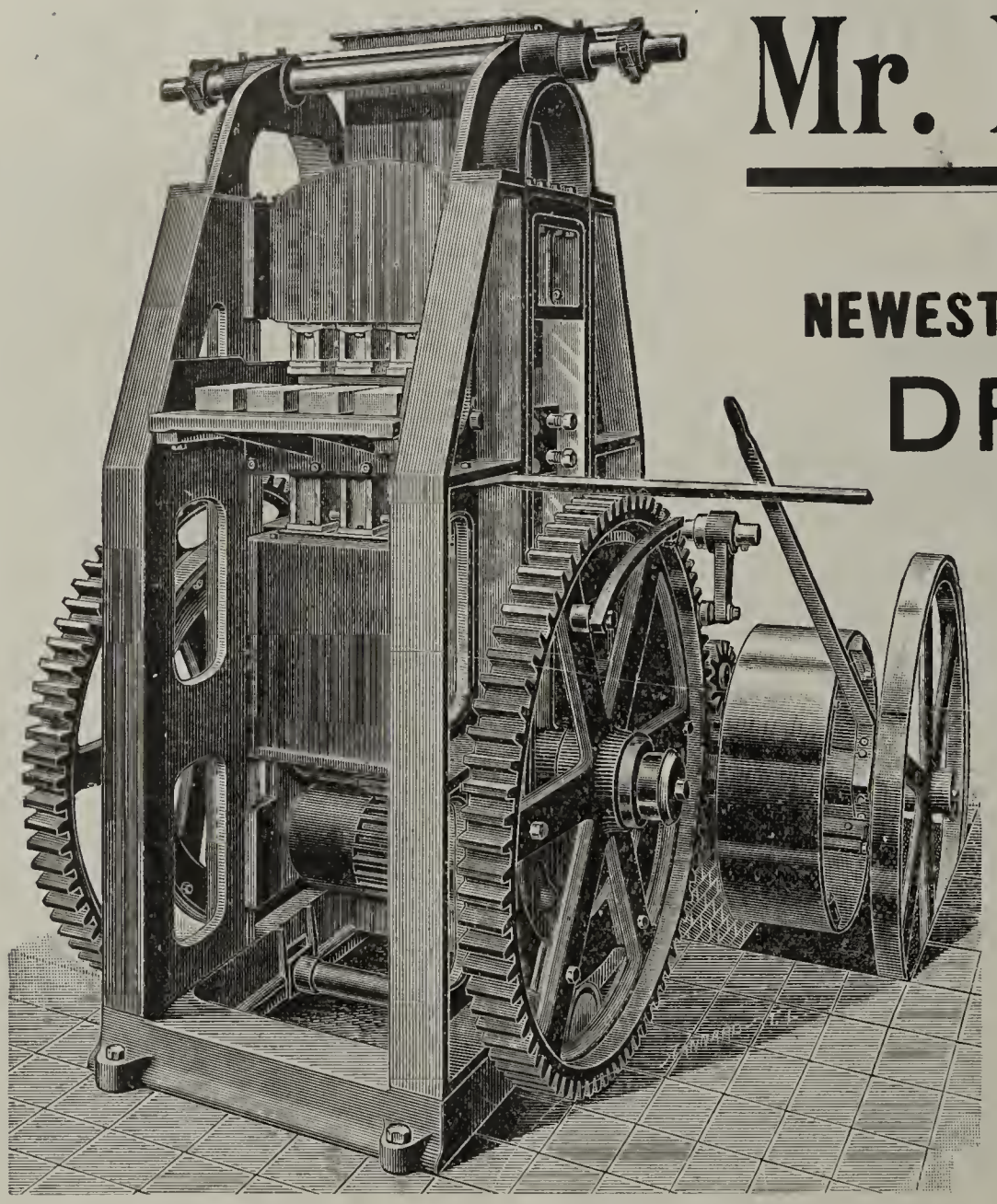


THE FERNHOLTZ CLAY PULVERIZER.

The Fernholtz Brick Machinery Co.

Cable Address "Fernbrick." Western Union Code.

Boyle Avenue and Old Manchester Road, ST. LOUIS, MO., U. S.A.



Mr. Brickmaker

Are you looking for the

NEWEST, BEST AND CHEAPEST IN

DRY-PRESS BRICK MACHINES?

If so, you cannot afford to overlook the strong points of excellence and the remarkable **simplicity, strength** and **efficiency** fonnd in

THE RELIANCE

"The Machine with a Future"

Radical departure from old principles.

Unique in construction, sound in principle, unrivaled in attainment!

Makes not only Brick but Money

A FEW POINTS:

1. Weight and Floor Space about one-half that of any other rick Machine.
2. Compression of Clay Perfect and Uniform. (Entirely new Principle).
3. Every Brick is a Face Brick. There are No Granulations.
4. Adjustment permits any pressure desired (A Feature peculiar to the **RELIANCE.**)
5. Cheapest because having fewest parts. (Also cheapest to keep in repair).

EMINENTLY PRACTICAL AND ECONOMICAL

WRITE TO-DAY FOR PARTICULARS.

SEND CLAY FOR SAMPLE BRICKS.

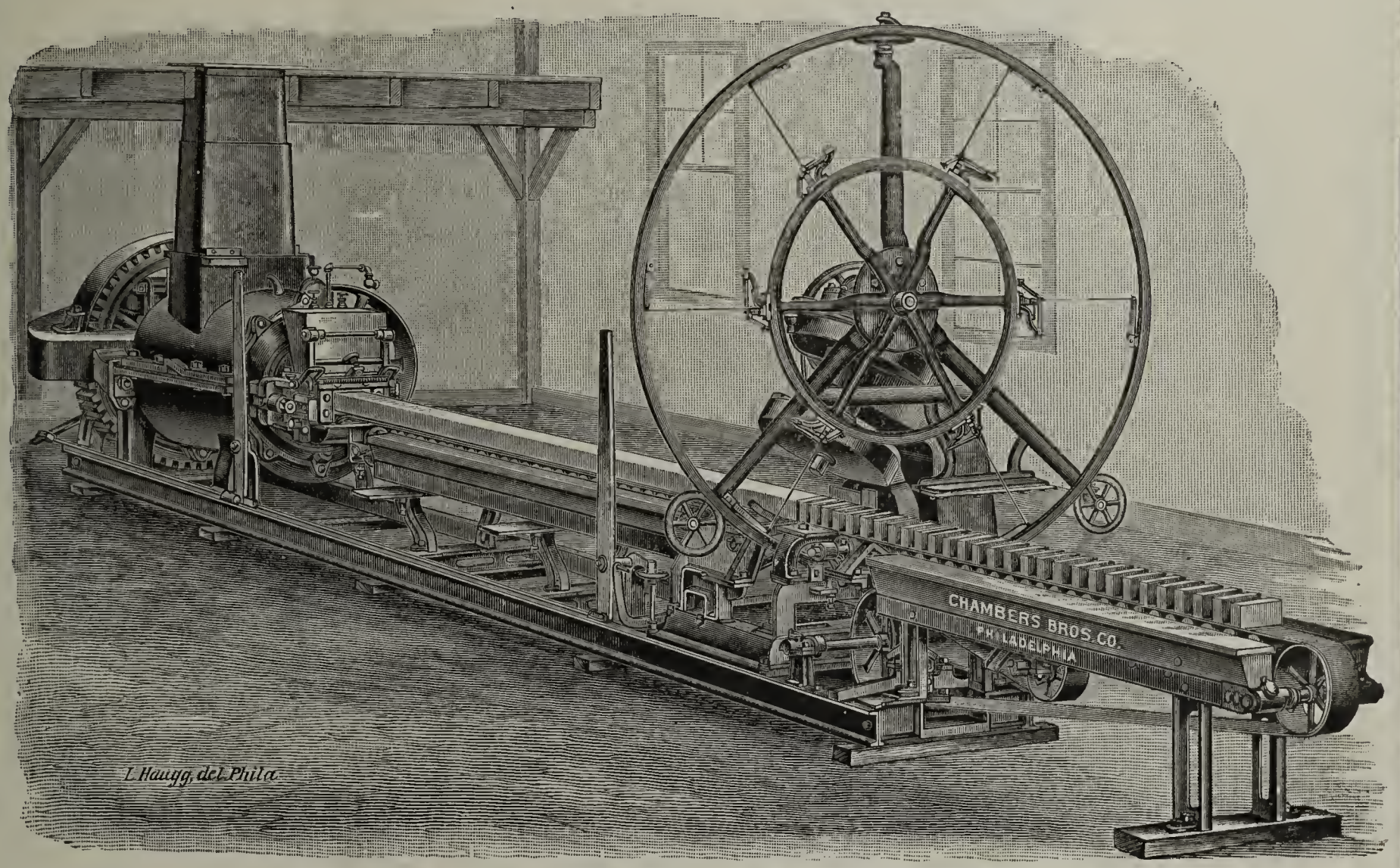
Made By the

RELIANCE MACHINE AND TOOL WORKS

ST. LOUIS, MO.

MACHINERY FOR BUILDING BRICK
AND FOR STREET PAVERS

ROUND CORNER PAVING BRICK WITHOUT REPRESSING



THE CHAMBERS AUTOMATIC SIDE-CUT BRICK MACHINE.

Automatic End Cut Brick Machines of five sizes, having capacity from 10,000 to over 100,000 brick daily under favorable conditions.

CHAMBERS BROTHERS COMPANY
52D AND MEDIA STREETS
PHILADELPHIA, PA.

E. R. FRAZIER, Chicago Agent,
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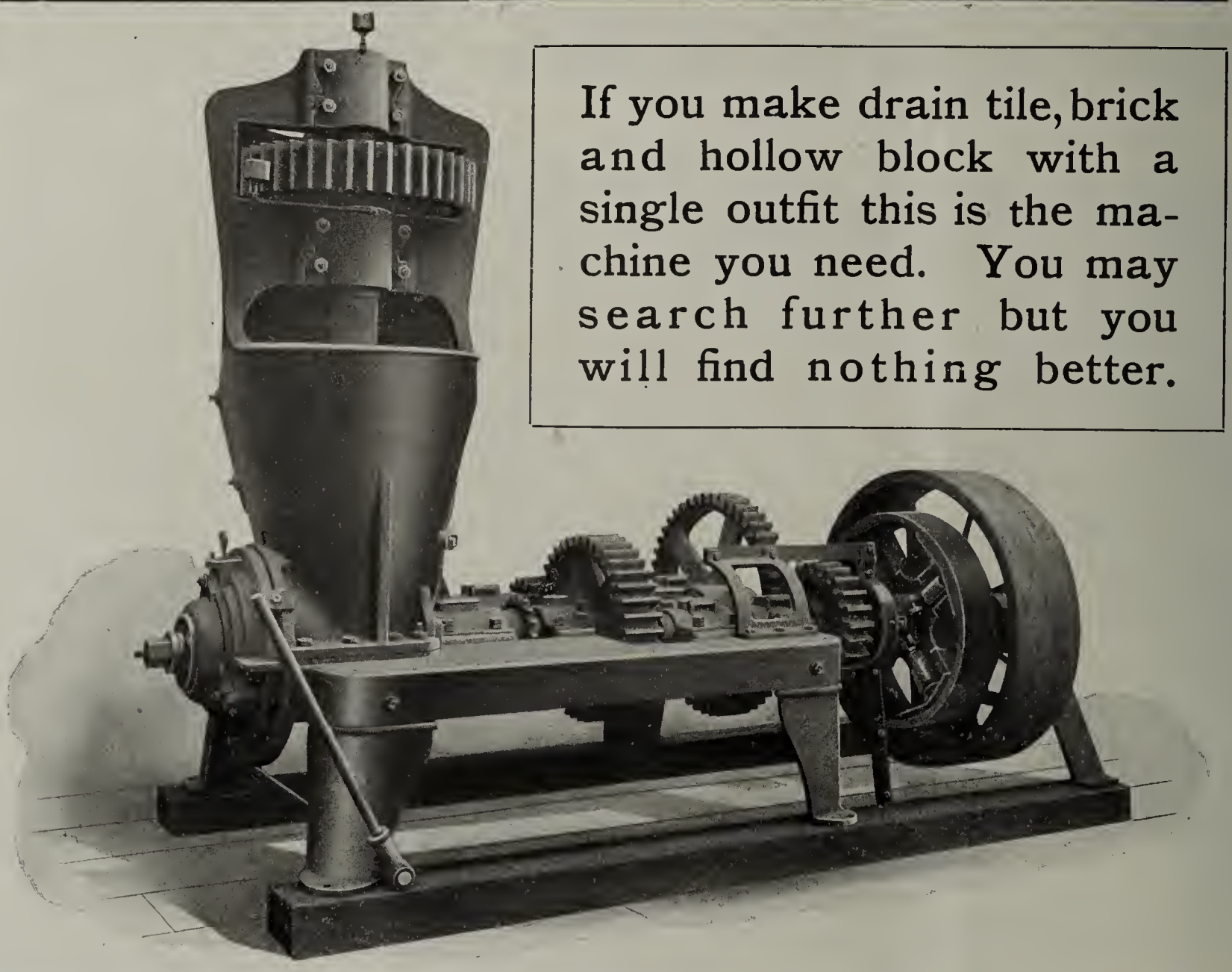
THIS IS THE ONE



If you make drain tile, brick and hollow block with a single outfit this is the machine you need. You may search further but you will find nothing better.

THE BREWER NO. 10 A

Is an improved pattern of an old time successful machine. Everybody knows Brewer Upright Machines are tile makers. Nobody disputes it, and this machine is the best one ever put out from Brewer Shops.

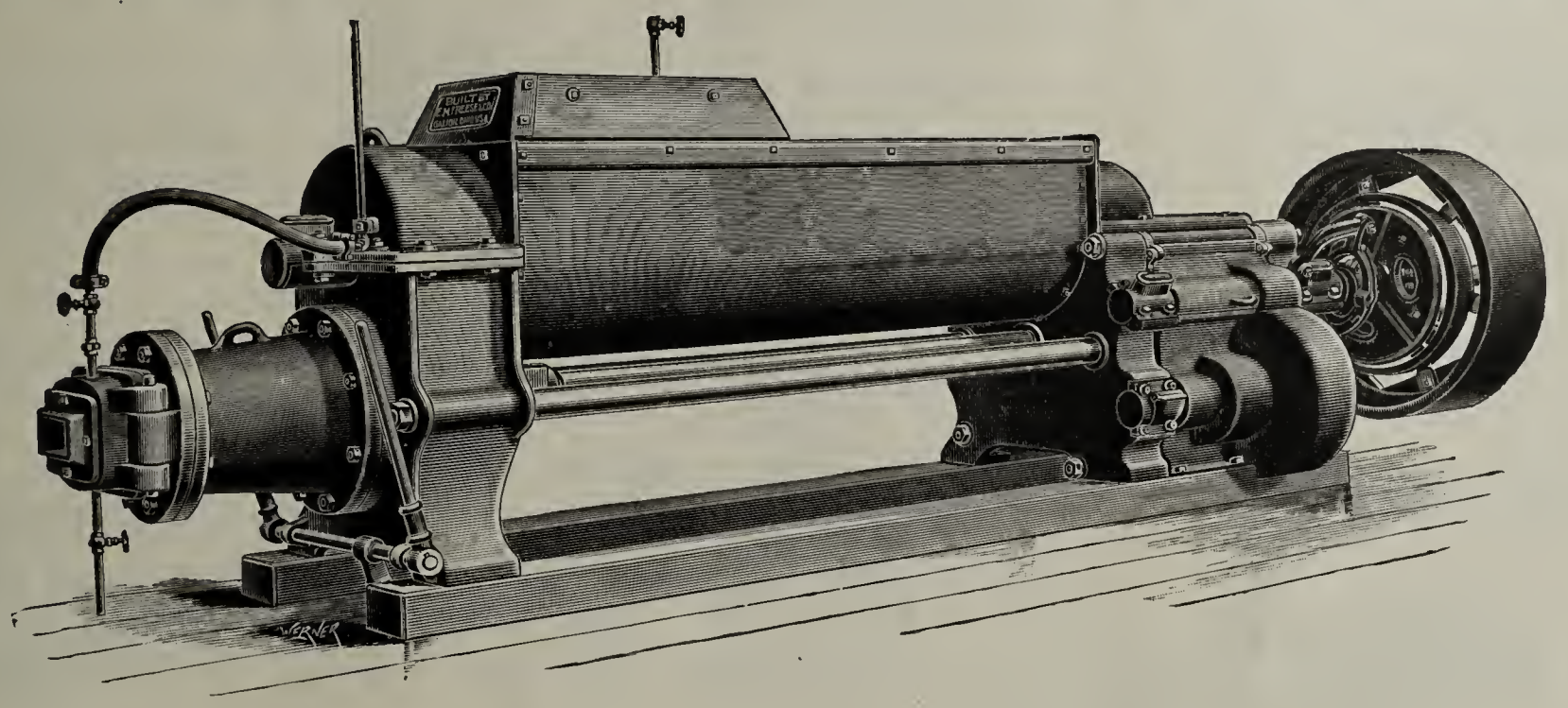
A FEW SPECIFICATIONS

Pugging shaft, 6 inch diameter; knives, forged steel; augers, white iron; up-thrust bearing, marine pattern; upright body, cast in one piece.

WRITE FOR FULL DESCRIPTION AND SPECIFICATIONS

H. BREWER & CO., TECUMSEH, MICHIGAN.

UNION BRICK MACHINES



We build these Machines in five sizes. Capacities to 10,000 brick per hour.

Several hundred are in everyday use. They do first-class work and are convenient, economical and durable. This can be verified by investigation.

We also build Brick Machines with separate Pug Mill.

Don't forget our Automatic Cutters. **They give satisfaction.**

State your requirements and let us furnish particulars.

E. M. FREESE & CO.

GALION - - - - OHIO

SEWER PIPE MACHINERY

PRESSES AND DIES

I. E.

TRAP DIES

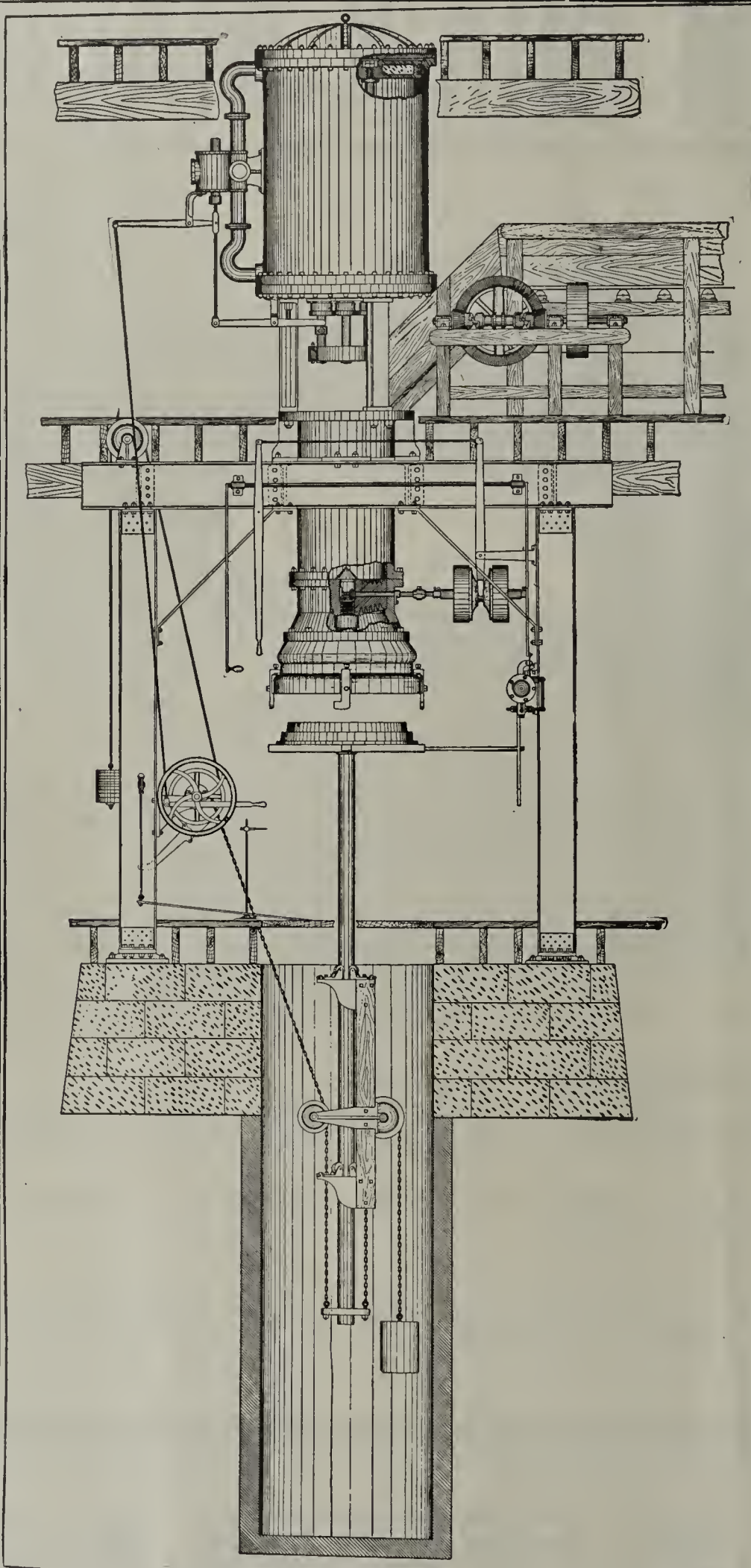
CLUSTER TILE DIES

FLUE DIES

COPING DIES

RING DIES

TUYERE AND SHAPE DIES FOR BESSIMER FURNACES



NOZZLE AND SLEEVE PRESSES

TUYERE PRESSES

DOUBLE END HORIZONTAL STEAM PRESSES

DRY AND WET PANS

CLAY MILLS COMBINATION CLAY PANS

CLAY WORKING TOOLS

THE TURNER VAUGHN & TAYLOR CO.

WRITE FOR PRICES STATING CAPACITY

Cuyahoga Falls, Ohio, U. S. A.

Leadership means Superiority, which tacitly acknowledged

SHOWS UNDENIABLE MERIT

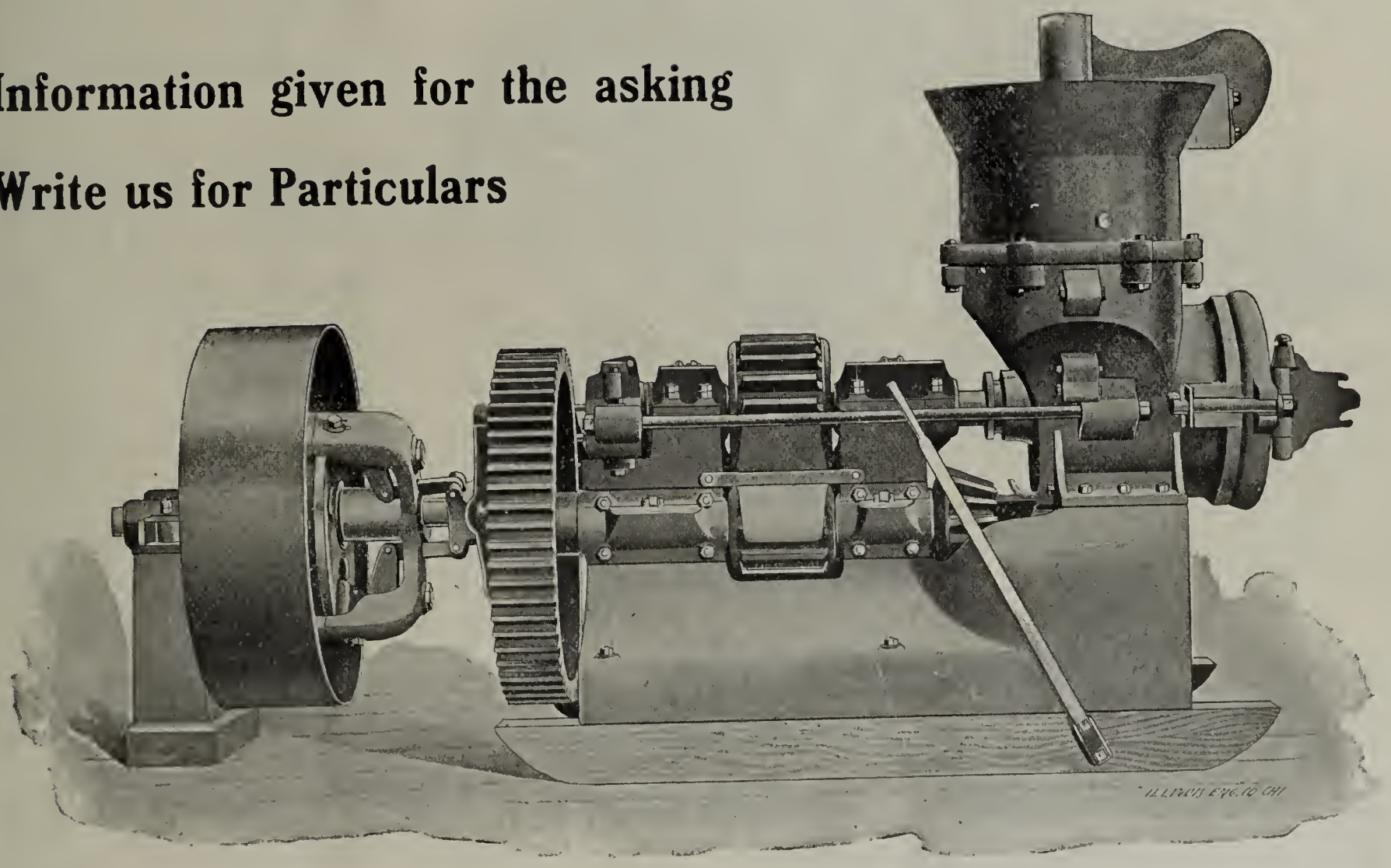
Success is based upon intrinsic worth and the success of the "WONDER" is phenomenal

Correct principal and thorough integrity in construction have made its supremacy unquestionable.

It works where others fail.

Information given for the asking

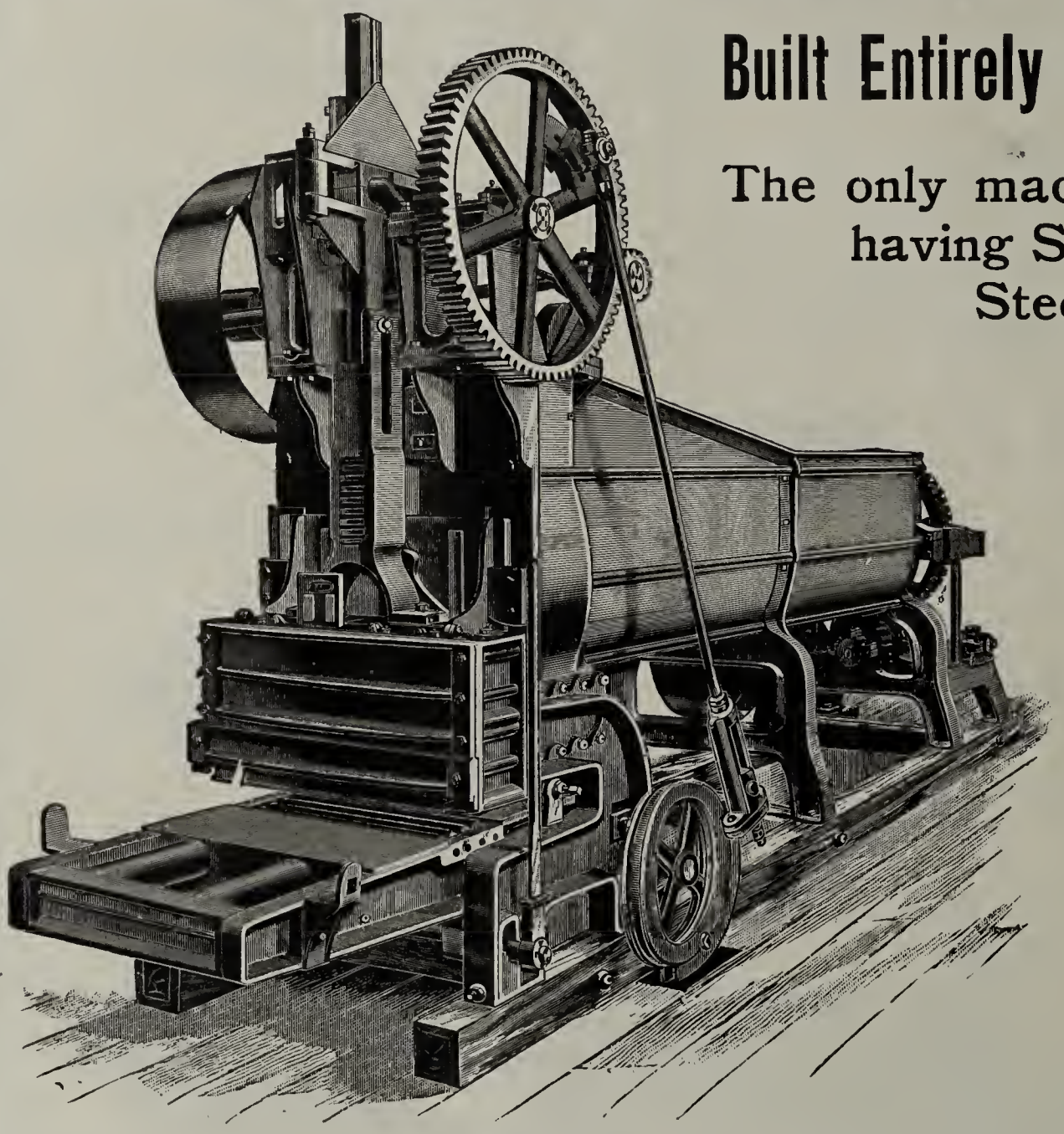
Write us for Particulars



The Wallace Mfg. Co.

FRANKFORT, IND., U. S. A.

THE POTTS
HORIZONTAL BRICK MACHINE



Built Entirely of Iron and Steel.

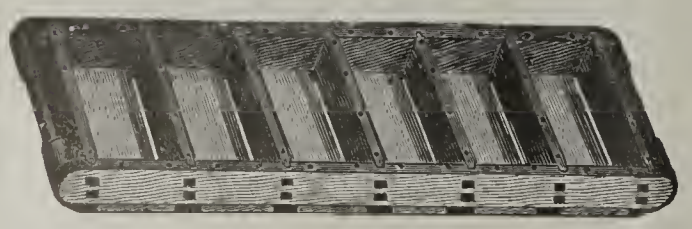
The only machine of this class having Steel Gear and Steel Shaft.

Built of the Best Material by the Best Workmen.

Simple, Strong and Durable.

No extra pug mill required to enable working the clay direct from the bank. Its great strength enables working the clay as stiff as practicable, insuring brick which will be STRAIGHT and SQUARE.

THE LEADER OF ALL SAND MOULD MACHINES.



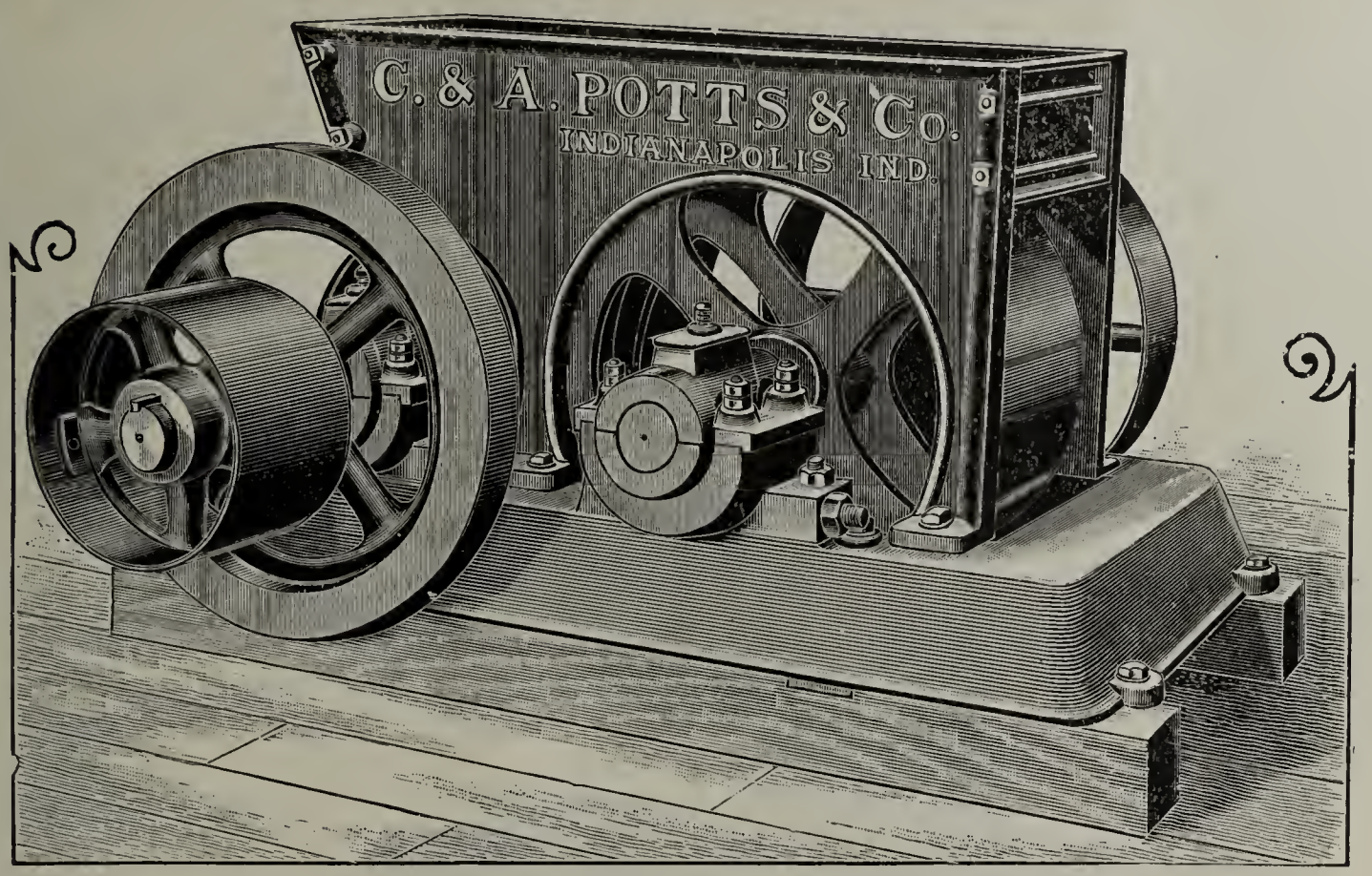
BRICK MOULDS A SPECIALTY

QUALITY IS OUR AIM.

We manufacture a complete line of Brick Yard Supplies. Write for prices.

C. & A. POTTS & CO., Indianapolis, Ind.

THE POTTS DISINTEGRATOR



Is not a spite machine, but is built the best possible. Having Heavy Chilled Rolls, Ring Oiling Bearings, Shafts of Steel and large in Diameter. The most successful machine for grinding out sticky clays and separating the stone.

THE POTTS MOULD SANDER

Simple in Construction,

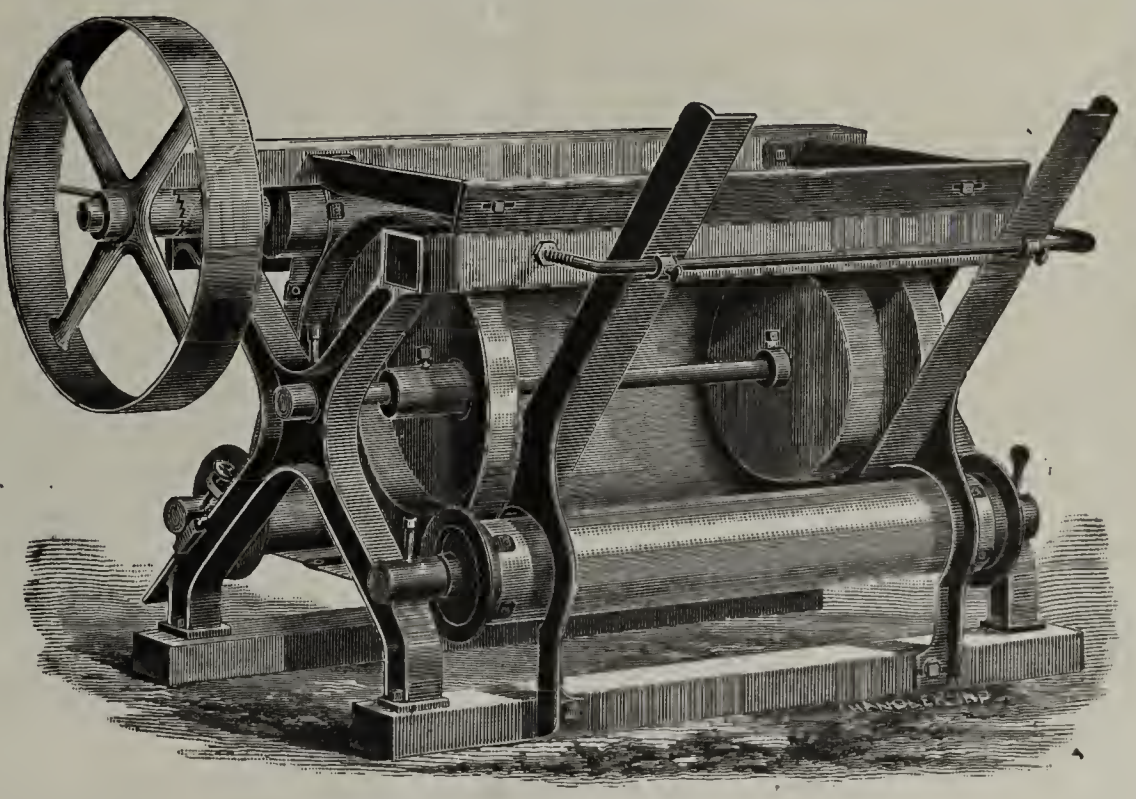
Strong and Durable,

Sands the Moulds Perfectly,

Never Strikes or gets Drunk,

Always Ready for Work,

No rick Machine Complete without this Machine.



Patented February 5, 1889.

We make a specialty of equipping Sand Mould plants complete. We are the largest manufacturers of this class of machinery in the world. Write for prices.

C. & A. POTTS & CO., Indianaoplis, Ind.

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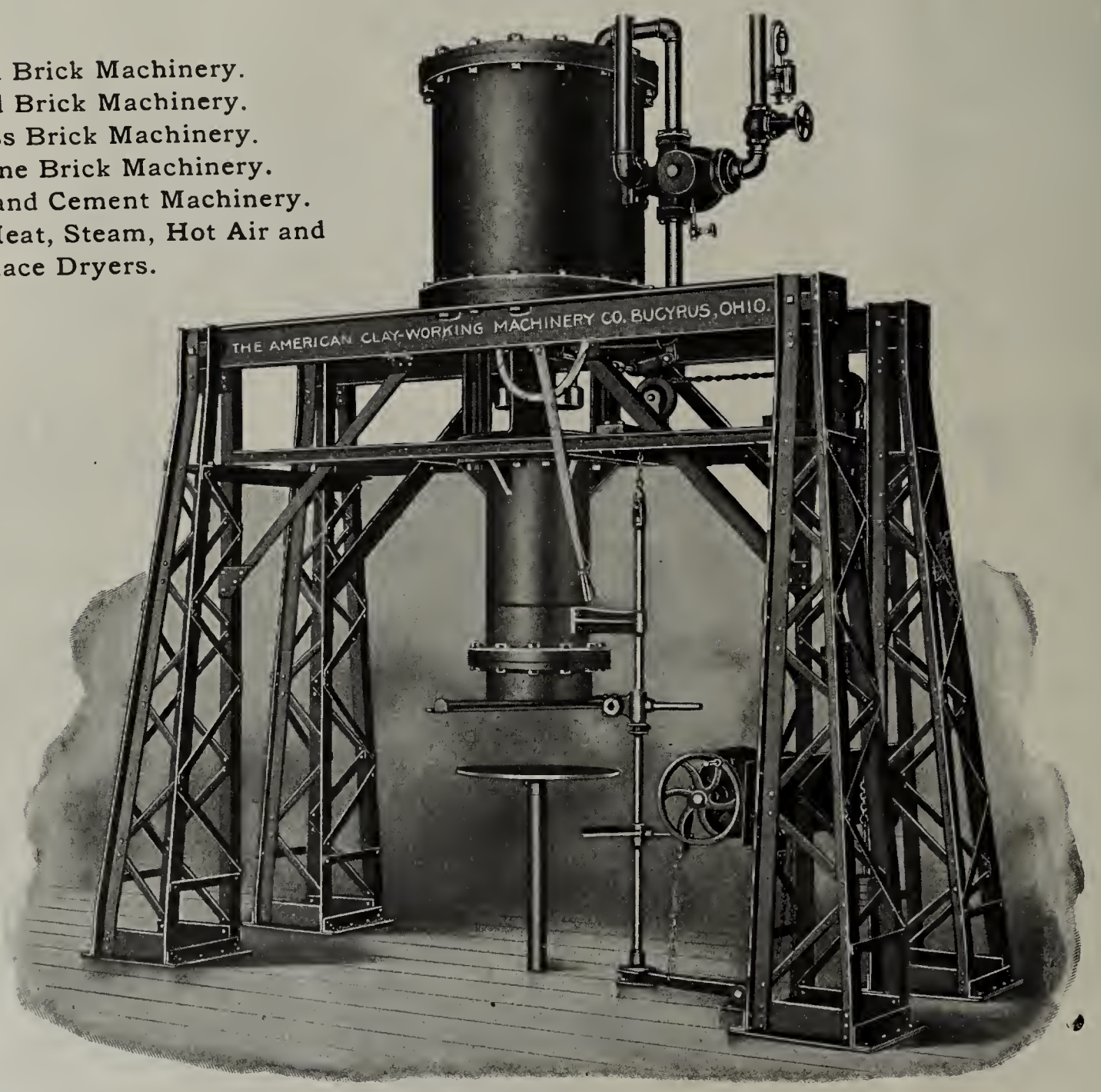

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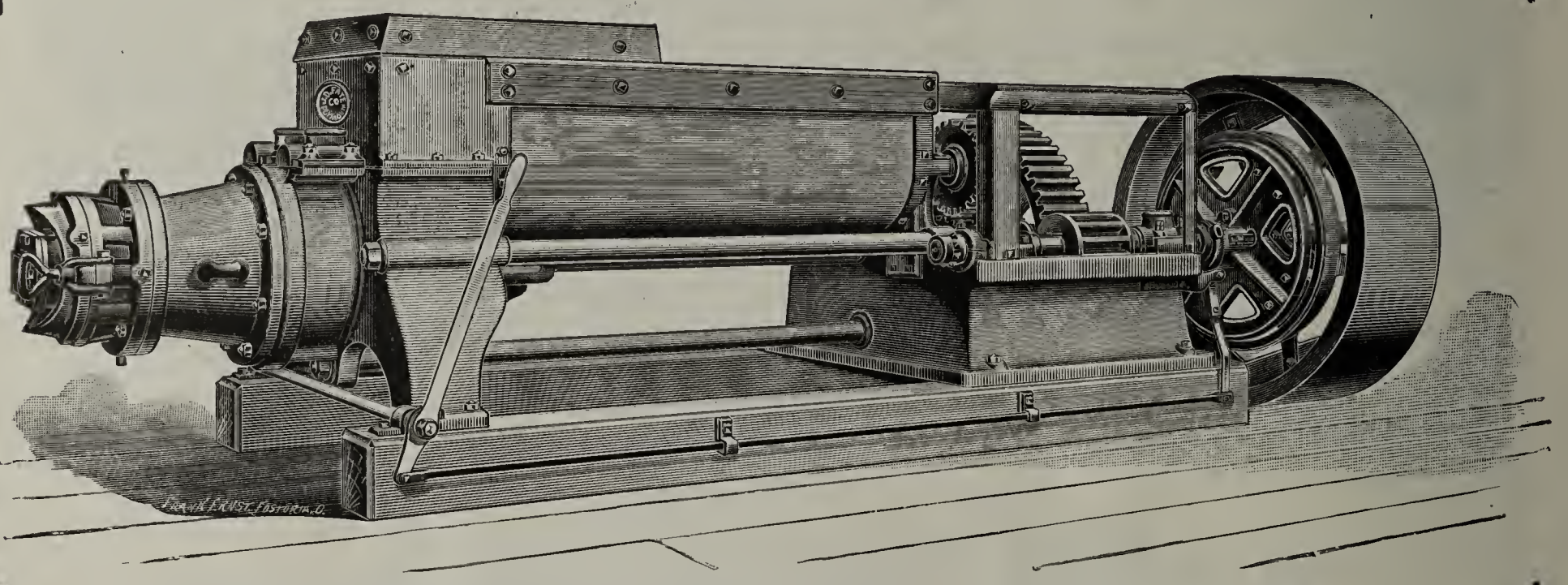

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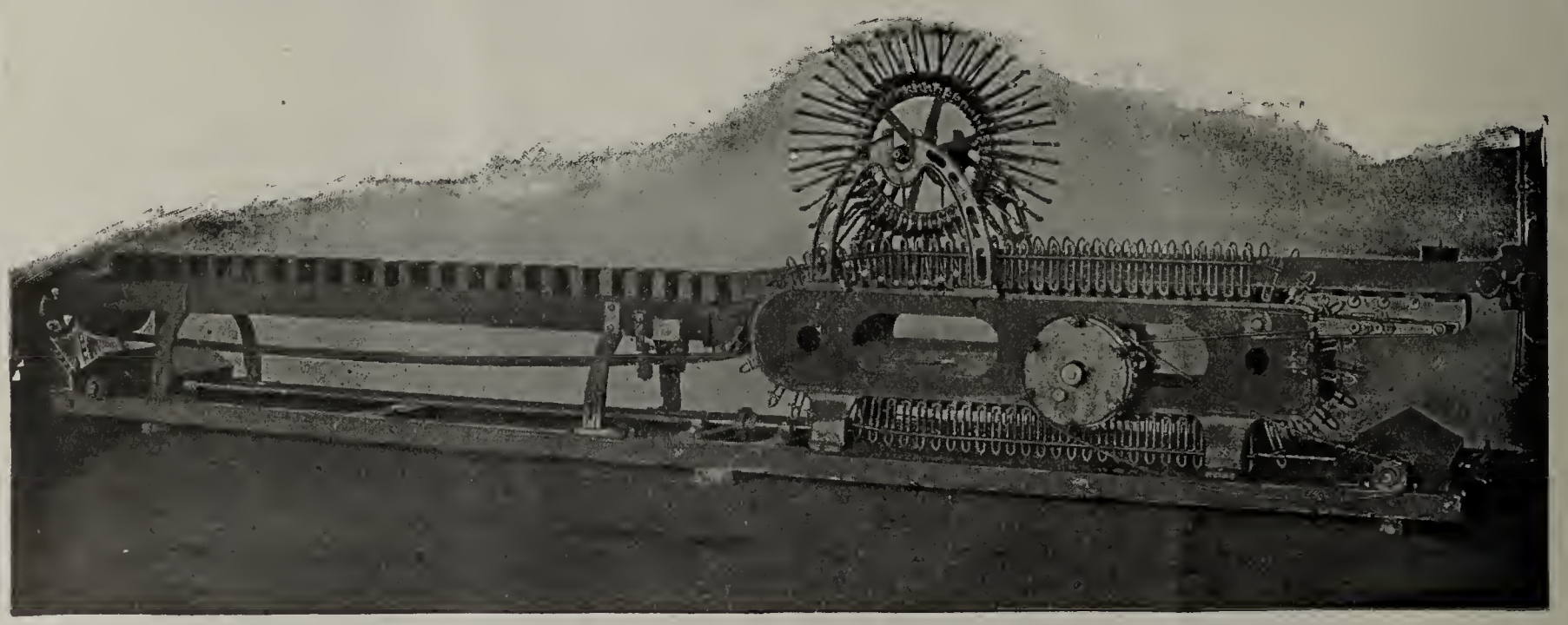

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CLAY RECORD.

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ECONOMICAL GENERATION AND USE OF POWER ON BRICK PLANTS.*

BY B. E. BECHTEL, WATERLOO, ONT.

A wise old saw has said that "Comparisons are odious." Now at the risk of having that epithet applied to me I am going to compare, because it is favorable, the attendance of this association at this meeting with the attendance at the previous meetings we have had. It certainly is very favorable. We have a much larger number of members present with us upon this occasion than we have had on any previous occasion; and I think that your executive committee may take credit to itself for this state of things. The committee has provided subjects for discussion and so far as possible they are well and ably discussed. I think that is probably one of the reasons why the clayworkers of the province have attended as well as they have. It also shows that the idea of having an association is a correct one and that it is filling a long-felt want among the brickmakers of Canada.

The subject that is before us at the present time is "Economical Generation and Use of Power on Brick Plants." When we consider this, there are really only three or four different powers in use or that can be possibly used in brick plants. Steam power is the most commonly used. Electric power is used quite generally in certain places. Here in the City of Hamilton I understand that quite a number of plants are using electric power, but they are placed in a position to get that power cheaper. It cannot be done in all yards. The gas engine is another method, and latterly another method of producing power has come into use to a certain extent: I refer to a suction gas producer plant. As its name implies, it is a means of producing gas and using it directly after being produced in an engine of the gas-engine type. The gas comes from ordinary pea-size anthracite coal and after it is produced it is drawn through by means of pumping or suction engine into the engine and exploded in the ordinary way. The cost of this sort of power is probably less than any other method. I think I can include electric power in that. There is a plant of this kind in our immediate vicinity. This installation is producing at the present time 28 brick horse power, and using per day 350 lb. of pea-size anthracite coal. This costs $4 per ton, and, as you will see, it costs about 70 cents per day of 10 hours. I do not think there is any other method of producing any other power, steam or otherwise, at so low a cost. At the same time the care of the plant is reduced to a minimum, very little more care being necessary than is required to take care of a gas engine. Steam power is, as we all know, the usual power in brickyards. It is the power that most of us, I think I might say very nearly all of us, use, and it is therefore the one that will perhaps be of the most interest to us as brickmakers to-day.

We all know that brickyards in this country are temporary affairs. That is, they have been that since the brickyards were started in this country. The reason of that is because many of the clay deposits are not very thick, and after you have used the clay for four or five years it is necessary to move your brickyard to some other place or to get it nearer to your clay bank. In consequence, the plant is put up as cheaply as possible and we make as much out of it as we can and then move it. Other mills are put up in a substantial way, but because our fathers put up brickyards in a temporary way many of us feel that is the way to put up a brickyard. Gentlemen, we have arrived at a different stage. The better thing for us to do now is to put up good brickyards and in a good substantial manner.

I might enumerate some of the difficulties which we occasionally find in brickyards. I have noticed occasionally not only in Canada but on the other side of the line, a boiler that has not been walled in. The result is, it costs a great deal more to generate and maintain steam in a boiler in that condition than if it were walled in with brick. We all know that iron will give out heat much more than brick. We all know you can take hold of a brick at one end when it is red hot at the other end; but take a piece of iron nine inches long and heat it red hot at one end and try to take hold of it on the other and I fancy you will find a great difference. That is the reason it is much better to wall your boilers in with your own products. Wall your boilers in well and see there are no cracks or imperfections and your boilers will do much better work.

Now another thing we see is that engines have not got a proper foundation. They are put down on wood. A block of wood is sunk into the ground at one end and a block of wood at the other. The bolts come up through and they are bolted down; the result is the engine will shake to and fro with every revolution of the shaft. That is not as it should be. The proper thing to do is to build a good foundation.

*Read at the Hamilton meeting of the Ontario Clayworkers' Association, Dec. 13th, 1905.

Let it go down into the ground six or eight feet if necessary · then let your bolts come from at least three or four feet down, and up through, and bind your engine solid. You can then get your engine shaft in line with the rest of your shafting and you will have no difficulty in getting your power.

I remember some time ago I went into a yard and they had been putting in a new engine and boiler. The engine foundation was built of bricks and lime and entered the ground but a short distance. The bolts came up through and the engine was bound down to it, but the foundation was not allowed to set properly, owing to ill-advised haste. When the engine was started a certain amount of jerking took place and soon every brick in the foundation was loosened. I went there a week or two after installation and the proprietor said, "I don't understand how it is, but I can't get enough power out of that engine to run my machine." It was quite clear to me what was the matter. The shaft was pounding and it took more power to run that than to run the brick machine. But he was oblivious to that fact. All that was necessary to do was to think for one moment what had happened. If he had to turn that shaft by hand he would have soon known what was the matter.

Frequently we see that steam pipes are not covered. It pays to cover them. They should be covered. It is an easy matter to get it done; it costs but very little and it pays well.

Again, you often observe leaky joints that are not properly packed; the bolts are not drawn up or perhaps they do not fit; the result is loss of steam. That little loss of steam goes on continuously from day to day, and if a person were to figure the amount of loss of steam that occurs through leaky joints he would be very careful not to have any either in his boiler or steam piping.

Frequently the pumps are not properly packed. Instead of forcing your water into the boiler they are only doing half as much work as they ought to do. A great deal more depends upon the proper packing of pumps than a person has any idea of.

Another frequent source of trouble is the slipping of the belts. One great difficulty in brickyards is that we are apt to think that if a belt will run a machine at all it is all right. Now, the proper thing to do is to know how much strain and there will be no danger of it slipping, and be sure to have the pulleys large enough. Get pulleys a little larger than the specification, and get your belting a little broader and a little larger, and then you will have less trouble. If the belt slips tighten your belt. The tightening of the belt, however, draws the shafting together, imposing a strain upon it with a liability to bend the shaft. This strain involves the use of a great deal more power to run the shafting than a person would think. Belts should be plenty large enough and run fairly loose and in that way you will get better results.

Another source of trouble we have noticed is that shafting is not in line. This is something that will occur in brickyards very frequently. Your building being temporary, the foundations for your shafting are probably above frost line. The frost gets below your foundation and it raises the foundation where your boxes are fastened on and they are probably half an inch above where they should be. The result is that shafting is out of line and it binds and beats. The babbitt is run out of the boxes; the oil won't stay and it begins to grind. I remember seeing an advertisement by a company that advertised ball bearings for shafting. It stated that it was necessary to put in ball bearings and noted that on many plants from 33 1-3 to 40 per cent of power was required to run the shaft. I have no doubt that is so in a number of cases, but to say the cure is to be in ball bearings is an entirely different thing. I think the proper thing is to get an engineer, if you can't do it yourself, and let him level up your shafting and get the shafting in line; babbitt your boxes and get everything in good shape and you will find things will run in very much better condition.

There is another thing I have found and that is that it is always well to run your main line shafting pretty fast; run your belts fast. There is not as much strain on a fast-running belt in transferring power as on a slow-running belt. Where you have large pulleys your belt runs a larger number of feet per second and there is very much less strain on your belt. You get the same result and there is less strain upon the shafting and the pulleys. It is a little difficult for a brickmaker to know just what size of bolt he ought to have. You go to the manufacturer of a machine and ask him how much power it takes to run a certain machine and he will generally tell you pretty near what you ought to do. But I think probably the better way would be to write to a manufacturer of belting and ask him how much strain a belt of a certain size and thickness will stand, and what kind of a belt you ought to use to transmit a certain horse power and they will as a rule give you a little larger size. The manufacturer of machinery will probably give you a little smaller size for he wishes to give you the impression that his machinery will run with the least possible power. If, however, you go to a manufacturer of belting he will give you a little larger size than you need perhaps. Use the larger size.

WATER-SMOKING AND BURNING OF CLAY-WARES.*

BY J. B. MILLER, TORONTO, ONTARIO.

Within the past few years great advances have been made in the methods of brickmaking in Canada, but, in many cases, the methods of watersmoking and burning have hardly kept pace with the great progress in machinery and modern methods of drying.

The subject allotted to me is a very large one, and why I should be chosen I cannot say. I would not presume to teach many gentlemen who are here; in fact, I would very much rather be a student. There are gentlemen present who have spent thir lives in this class of work and could no doubt give us information which would be of greater value to us all. As most of you are aware, we use as many different kilns or systems of burning as there are systems almost; except the old scove kiln, which is now a thing of the past, I am very pleased to say. Some people imagine the brick made when once safely set in the kiln. My own opinion, from experience and observation, is that nine times out of ten the burner holds the enviable or unenviable position, as the case may be, of making a good brick or spoiling it. I am speaking to gentlemen in whom a sympathetic chord will be struck (if you have been a brickmaker very long) when I say we have seen the very finest of brick set in the kiln, dried off with the greatest of care and the best wood procurable, good weather and no accident in burning; the burner prepared to stake his reputation on the kiln being the best he ever burned; your hopes raised high in consequence, and when the kiln is opened your hopes dropped more suddenly than Wall Street stocks, and there seemed a chilly sensation to be traveling up and down where your spinal column is supposed to be located. During your examination to see what can be saved from the general

*Read at the Hamilton meeting of the Ontario Clayworkers' Association, Dec. 13th, 1905.

wreck, the message comes with a telephone call, saying that Mr. Smith, to whom you had promised the whole kiln for face brick, wants 10,000 brick per day until his order was completed. In your dilemma you look up the burner —who, by the way, has drawn his fortnight's wages and carefully added it to his bank account—and tell him to come and see the kiln and give an explanation. After looking at the kiln and then at you, he quietly says, "Well, I cannot understand it. I know it was never neglected while I was on. Must have been the other fellow." You are trying in your mind to square yourself for meeting your customer, and prepare to tell him you are able to give him all the inside brick he needs but as for face, you have another kiln you are rushing right through and may let him have some in a week or so.

The first process of watersmoking is sometimes considered a very unimportant part of brickmaking. It depends very largely on what class of brick or goods your are making, and sometimes on the quality of your clay, whether it is important or not. In some goods, and at certain seasons of the year, I consider a kiln more than half-burned when safely dried off. I have seen heavy terra cotta pieces completely ruined before they were red hot, by one heavy fire, before it was ready for it.

In drying off common brick in down-draft kilns my practice is, to start with a gentle fire, gradually raising it until coming under full fire at about 48 hours after lighting. With close attention and clean fires, good mine-run or steam lump coal being used, the kiln should be a good hard kiln at about 120 hours after coming under full fire; costing for wood, say 50c; coal, $1.35 per M. Watersmoking of common brick receives very little consideration by the average burner. In drying off and burning in continuous kilns, the process is somewhat different. If you keep plenty of brick in the kiln ahead of fire, the problem of burning becomes easy. The process of drying begins as soon as the wickets are put up and daubed and all outside air shut out and obstructions removed. With dampers raised, the heat from burning chambers is drawn through, the brick placed in kilns ahead, together with the smoke, which, by the way, is little, in its passage to the stack. All clays can not be burned successfully by this method; nor yet all classes of brick; but where they can I strongly recommend it. Fuel required, 250 lb. per M; labor burning cost, about 15c per M. In fact, in some clays with which I am most familiar, it is the only way of burning successfully.

After getting your continuous kiln started (which has become an easy process, and which we feared more than anything else on the start, and were led to believe it was a very expensive affair) it is necessary to have a man in charge who is very attentive and uses his brains more than his hands; in striking contrast to the old scove kilns, of which it might be said that hands were sometimes used exclusively.

Sometimes on a continuous kiln the harder a man works the poorer is his success, and the great trouble is to get men to exercise patience enough and use little enough coal at proper times. Soft coal screenings are used exclusively in firing and, to burn successfully and economically, enough must be kept under fire to have a portion of the kiln annealing or simply holding the heat on them, using very little fuel; another portion under full fire, and another beginning to use a small amount of coal. In this way, a good speed can be maintained, no trouble being experienced in burning a section every 24 hours, under ordinary conditions.

The watersmoking of dry pressed brick is a matter requiring more serious consideration than common brick, and I can safely say in Don Valley at least (and think I will be endorsed by our friends in that business) it is quite as critical a period as any other in the making of a dry pressed brick. Dry pressed brick, properly pressed and set and all care taken, can be more readily destroyed during the watersmoking process than at any other stage in the burning, I believe. The course I have found most advantageous (wood being used for drying off) and no matter what class of kiln (except continuous) is used, is to start gently every second fire which you propose using when under full fire. Keep them going very gently 24 hours. At the end of that time a fair amount of moisture will begin to be driven off. Change the fire into the furnaces which were left without fire to begin with, and continue firing them for about the same length of time, increasing slightly as the temperature rises in the kiln. At the end of 48 hours from time of starting kiln, change the fires back again to furnaces where they were orginally started; being careful now to keep heat going constantly into the kiln, still increasing fires slightly. At the end of another 24 hours take on the remaining furnaces with a very moderate fire; at no time allowing them to burn completely down, nor yet be more than a moderate fire, increasing gradually so as to maintain a constant temperature in the kiln and keep the moisture rising. You have now reached a very critical stage in the burning, and under no consideration (unless handling a very extraordinary clay) must cold air be allowed to run into the kiln, or it means the destruction of your brick. From this period up to the time your kiln is under full fire (which should be the fifth or sixth day after starting, depending on the season) it is a matter for constant attention and little by little the fires should be increased, watching at all times the amount of moisture being driven off. When your kiln comes near the time for applying coal or full fire, if using wood, the moisture will come off somewhat intermittently, and gradually this will disappear. It is not necessary to await the entire disappearance of moisture before going under full fire; in fact, I have frequently seen indications of steam 24 to 36 hours after being under full fire.

Experience and judgment alone can determine what can be done with the various clays, as it is quite impossible to make a fixed rule applicable to all places alike.

After kilns are brought under full fire (particularly the down-draft type) and nothing up to this time has occurred to damage the quality of your brick, with a clean kiln and good fuel and careful men, the quality of your product is perfectly safe. I never lose any sleep over kilns after they are under full fire, providing I can keep all disturbing influences away from the works.

"IRONSPOT" NAME OF NEW VILLAGE.

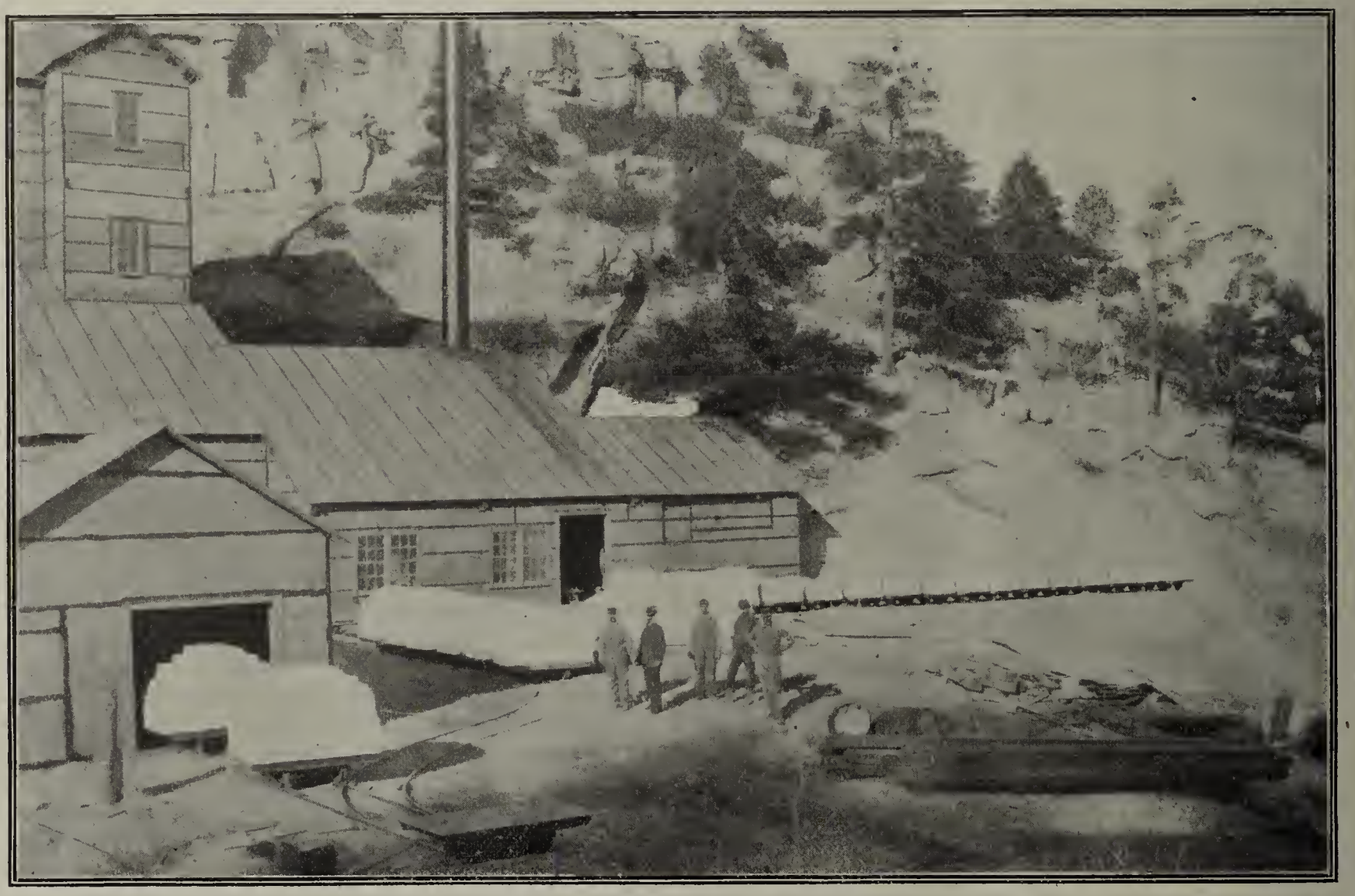
"Ironspot" is the name of a new village, which has sprung up near Roseville, Ohio, and which will have a regularly appointed postmaster in the near future. Willard R. Bell, proprietor of the general store at that place and kiln foreman, is the postmaster, he having secured his appointment through Congressman Beman G. Dawes.

At present the little village has a population of 300. It is expected, however, that this number will be doubled next spring. The name Ironspot is taken from the trade name of the product of the Ohio Press Brick Company's plant at that place. R. L. Queisser of Zanesville and Frank M. Ransbottom were instrumental in securing the establishment of a postoffice at that place.

The Harvey (Ia.) Brick and Tile Works shipped out 250 carloads of brick and tile as the first year's work.

A COLORADO SAND-LIME BRICK PLANT.

The Colorado Brick and Artificial Stone Co., situated in a picturesque little valley, on a short spur leading from the main line of the Denver & Rio Grande railroad, some five miles north of the center of Colorado Springs, has been in operation since last March.



View of the Colorado Brick and Artificial Stone Co., Colorado Springs, Colo.

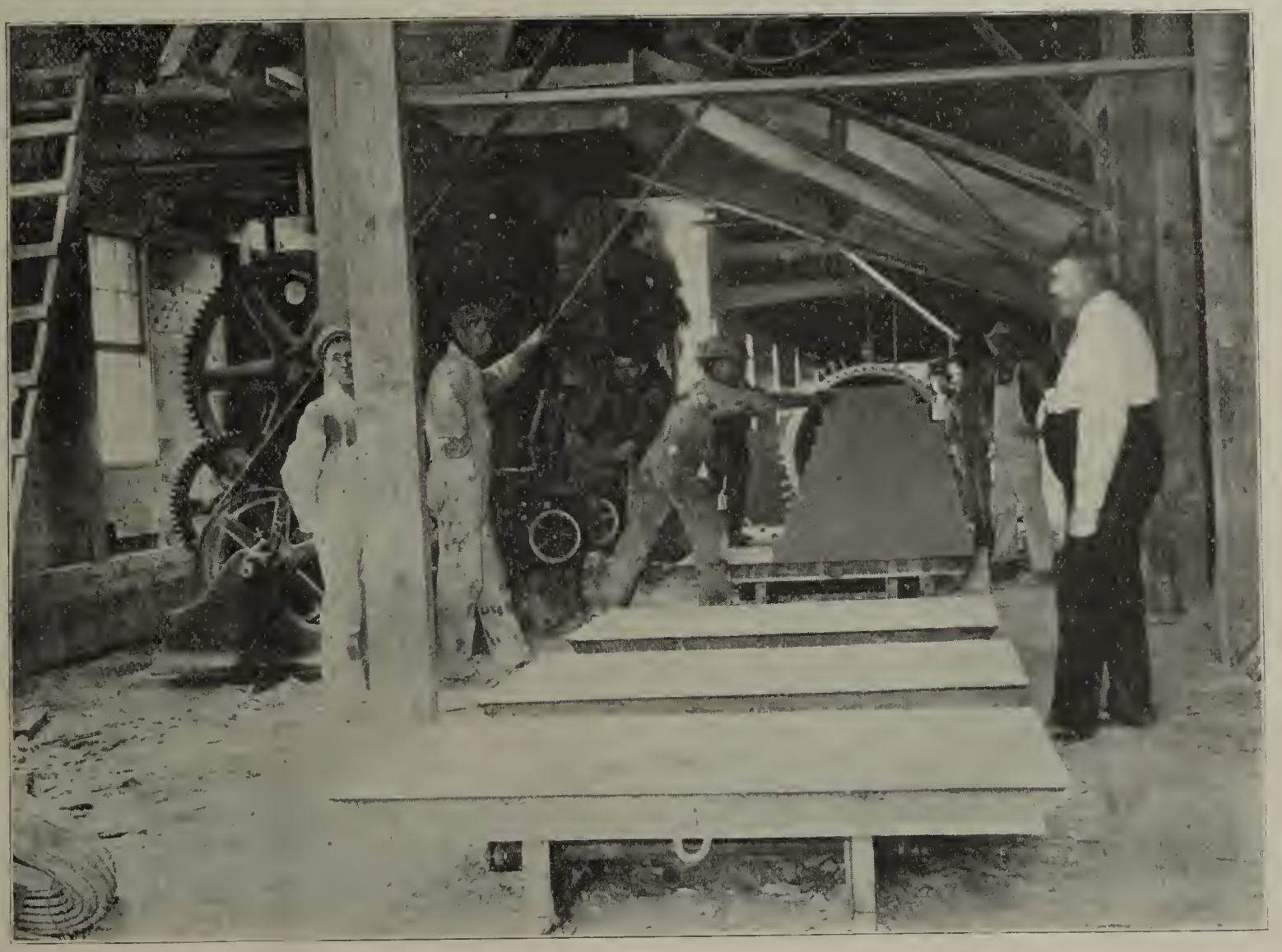
The company operates under the "Huennekes System," using the special machinery controlled by this system, including the only six-mold press thus far made by the Chisholm, Boyd & White Company for a sand-lime brick factory, (enabling them to make sure of a 20,000 daily output.)

Their material is in the form of a very soft sandstone, which is found in very large quantities and economically quarried and broken up into sizes suitable for handling in their nine-foot iron frame dry pan. The building, as will be seen by the photographs, is built against the side of a hill, so that the material is handled as much as possible by gravity, there being but two bucket elevators in the entire plant. At the base of the main rock ledge is a small track on which runs an iron car, into which the rock is loaded in suitable sizes and run along down a slight grade to a chute. The rock is dumped into this chute and slides down by gravity to the floor immediately in front of the dry pan. Here the sandstone rock and burnt lime are fed in proper proportion by shovelfuls into the dry pan, where it is not only crushed, but the first mixing takes place. Thence it is elevated by bucket elevator number one to a hopper, feeding a tube mill 17 feet long by 5 feet in diameter, at the discharge end of which is a special mixer which comes with the tube mill, where the material is moistened and thence raised by bucket elevator number two to two large storage bins holding material for 27,500 brick in each one. The material drops out of this bin, after being stored for twenty-four hours or more, onto an 18-inch belt conveyor, which delivers it into a small mixing conveyor, where the final moisture is applied preparatory to molding. This conveyor delivers the now thoroughly seasoned and properly moistened

View of the Sand Banks and Plant.

material into a feed agitator, which distributes the moisture evenly throughout, and feeds the material regularly and

evenly through the bags in the press. The company has installed a cylinder 75 feet long x 6 feet in diameter, with two heads, the brick being delivered on brick cars at one end in their raw form, and taken out at the other end as finished product, and switched alongside the railroad track, making it possible to load economically two railroad cars at once, if necessary, direct from the steel brick cars. The lime and coal come into the spur, as will be seen by illustrations, on railroad cars, and are unloaded into the bins lying immediately alongside of the railroad track. The lime used is very strong gray lime, coming from the southern part of the state, and carries a high percentage of calcium



Interior View of a Sand-Lime Brick Plant.

—between 85 and 90 per cent. The lime is taken up to the dry pan floor in a steel car on a lift elevator.

Since commencing operations last March, the company has made in the neighborhood of 2,000,000 brick, and as an indication of the success of their operations, they have disposed of their entire product at remunerative prices (about 95 per cent of which has been sold as face brick,) with the exception of about 125,000 brick now standing in the yards. Most of their brick has been shipped to Denver and used chiefly in residences, where they find great favor among architects, builders and property owners. The product has also been shipped to Pueblo, and in small quantities to Lamar, Grand Junction, etc., the Denver & Rio Grande railroad having used the brick for the lining of the inside walls of their handsome new passenger depot at Grand Junction.

The company also makes ashlar blocks 8¼ in. x 16½ in., both smooth and rock face, on its six-mold press, which take very well.

Feeling greatly encouraged at the success of the first season's business, the company is contemplating doubling the capacity of its plant so that it can supply the common brick as well as the face brick demand. This will enable them to greatly reduce the cost of production and compete with common red brick, in addition to continuing the manufacture of a strictly high-grade sand-lime face brick.

The principal office of the company is located in Colorado Springs, and the officers are Clark Meller, president; R. J. Verner, vice-president; Geo. W. Bierbauer, secretary and treasurer.

SEVEN POTTERIES ARE HOLDING ALOOF FROM THE PROPOSED COMBINATION.

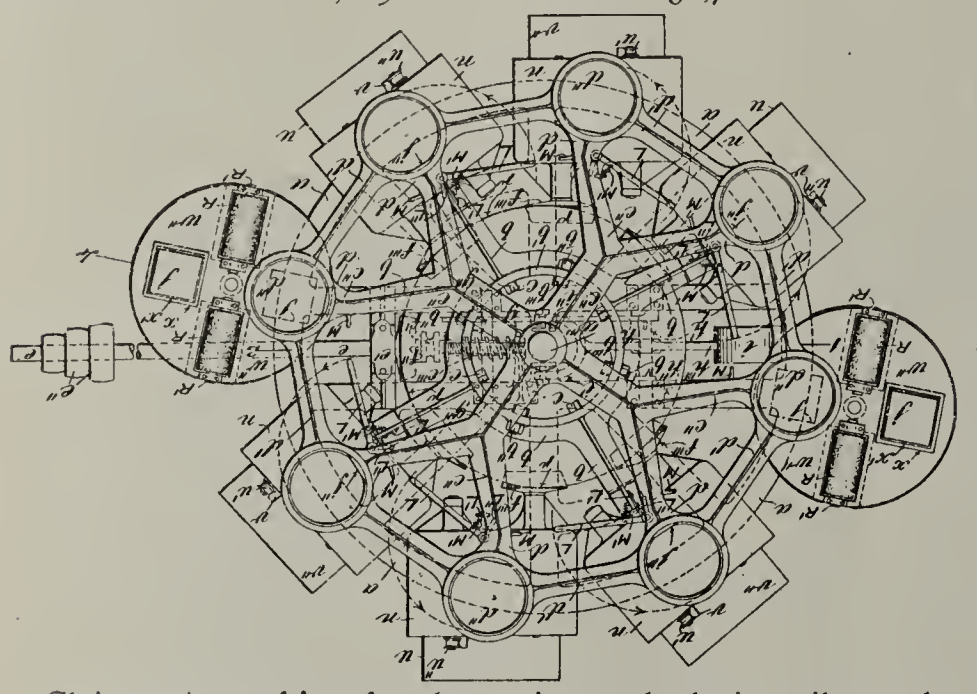
East Liverpool, Ohio, auditors who have been employed by Newton Jackson, of Philadelphia, Pa., to make an investigation of the books of the various potteries that will be included in his pottery combination, which is now in process of formation, have completed their work in this city and have left for the East. It is announced that the combination will be successfully launched soon after the first of the new year.

The Laughlin Pottery Company, which will soon be operating almost 70 kilns, has refrained from affiliating with the new concern. Others are the Thompson Pottery Company, Vodery Pottery Company, West End Pottery Company, the Goodwin Pottery Company and the Harker Pottery Company. It is further stated that the large plant of the Knowles, Taylor & Knowles Company will not enter the combination.

NEW INVENTIONS THAT ARE OF INTEREST TO THE CLAY MANUFACTURER.

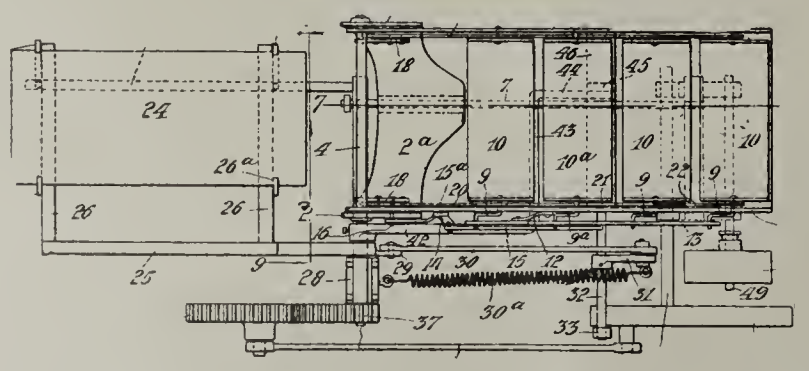
These new inventions are those that are especially of interest to anyone engaged in the line of building materials and their manufacture, or machinery to make them:

804,425. Automatic Machinery or Apparatus for Decorating and Glazing Tile and Other Articles of Pottery-Ware, Glass, &c. Frederick Mountford, Stoke-upon-Trent, England. Filed Nov. 10, 1902. Serial No. 130,708.



Claim.—A machine for decorating and glazing tiles and other similar articles of pottery-ware, glass, metal and other objects comprising a bed or frame a central shaft carried thereby, a frame capable of having a rising and falling and rotary movement about said shaft, tile gripping or holding mechanism carried by said frame, a cam mounted on the shaft and provided with grooves, a stationary frame carrying rollers engageable with said grooves and adapted to cause the tile-carrying frame to have a step-by-step rotary movement, a rotary cam, a pivoted weighed lever operated thereby to lift the tile-carrying frame, means for opening and retaining open the tile-gripping mechanism while a decorated tile is discharged and an undecorated tile placed in position, means for spraying, flipping or brushing decorative material onto the tiles, means for operating the spraying flipping or brushing mechanism and for taking it out of action as required, means for determining the length of time during which the spraying mechanism shall be in action, means for adjusting the timing mechanism, means for presenting the tiles to and receiving them from the tile-carrying frame and means for operating the tile presenting and receiving means substantially as described.

805,152. Brick-edging Machine. Frank E. Piper, Red Deer, Canada. Filed March 25, 1905. Serial No. 251,935.

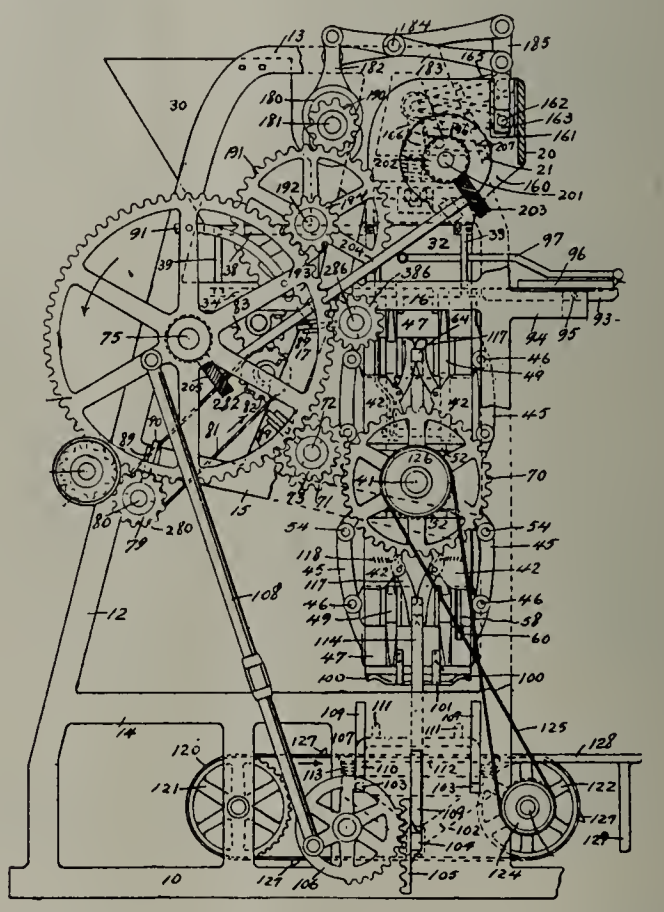


Claim.—In a brick-edging machine, a laterally and vertically swinging pallet-frame.

In a brick-edging machine, a supporting-frame, a laterally and vertically swinging pallet-frame, a chank-shaft rockably mounted in said supporting-frame, a segment operatively connected with said crank-shaft, a segment-frame carrying a segment in mesh with the first-mentioned segment, a rotatable cam, and a pitman connecting said rotatable cam with said segment-frame.

805,294. Machine for Making Cement Brick and the Like. Fred C. Horn, Indianapolis, Ind. Filed June 12, 1905. Serial No. 264,837.

Claim.—In a brick-molding machine, the combination of a revoluble mold, a hopper for the material located to one side of the receiving position of the mold, a material-receiver movable from under the hopper to a position over the mold when it is in its receiving position, said receiver being open at the top and the bottom, a platform under the receiver when it is beneath the hopper, the edge of which next to the mold is located sufficiently far therefrom to permit the revolution of the mold, a plate hinged to the edge of the platform next to the hopper, means for supporting said plate in line wiht the platform and flush with the top edge of the hopper when in the receiving position, and means on the receiver for holding said plate down when the receiver is over the mold.

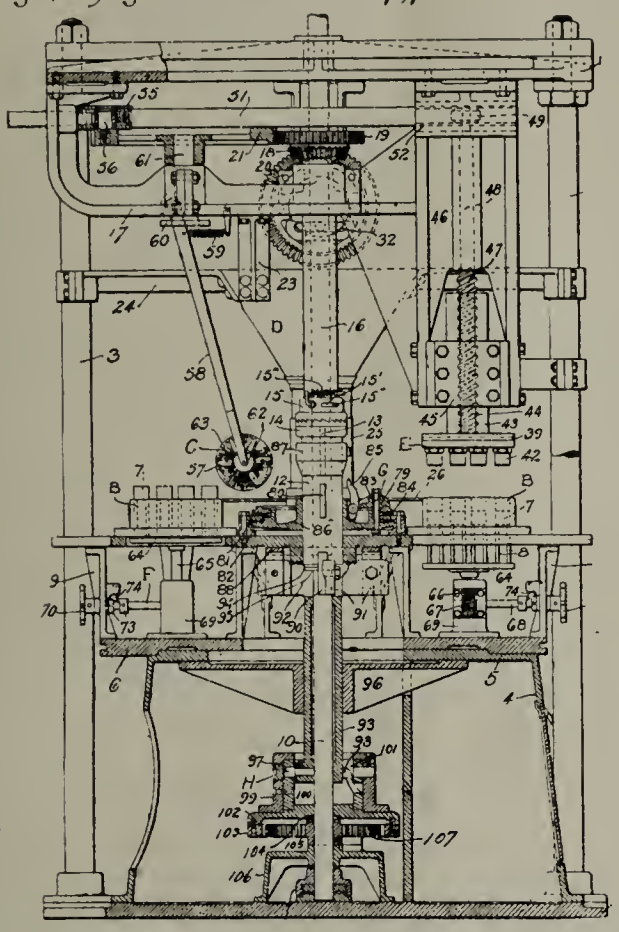


In a brick-molding machine, a revoluble mold that in the revolutions thereof moves alternately to a material-receiving position and a brick-depositing position, a material-receiver movable to and from position over the mold when in the material-receiving position, a platform on a level with the top of the mold, a pallet adapted to rest thereon, arms secured to the material-receiver that engage said pallet so that as the material-receiver moves from the mold it will draw the pallet upon the mold, and means connected with the mold for holding the pallet thereon.

803,479. Making Artificial Stone From Magnesite Miklos Gerster, Budapest, Austria-Hungary, assignor of one-half to Heinrich Freund & Sohne, Budapest, Austria-Hungary. Filed Feb. 3, 1905. Serial No. 244,044.

Claim.—The process of making bricks from magnesite which consists in burning the raw materal only to such a point as to accomplish a part of the reduction in volume necessary before the second burning, granulating the burned megnesite so finely as to accomplish a substantial part of such reduction in volume, whereby the cost of burning is lessened and the granulation is facilitated, pressing the granulated material into bricks and burning such bricks.

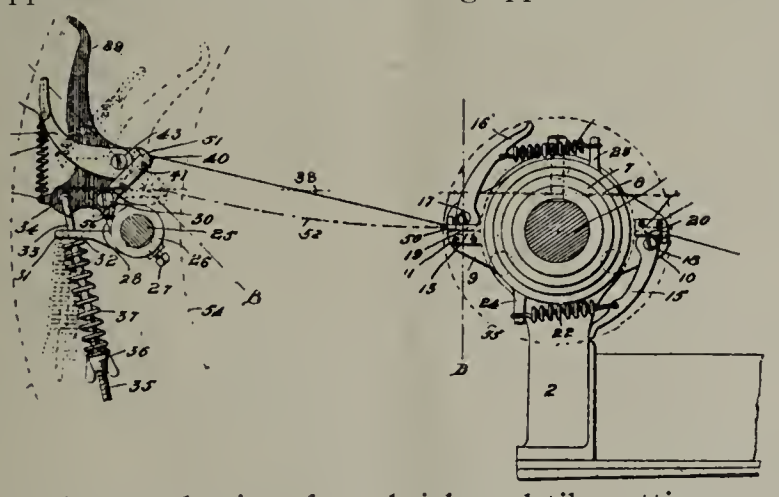
805,299. Apparatus for Molding Porcelain and Similar Ware. Edwin G. Kastenhuber, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed July 31, 1903. Serial No. 167,710.



Claim.—In an apparatus of the class described, the combination of a movable support upon which are mounted a series of molds, a stationary support upon which are mounted devices for delivering the material operated upon to said molds and for compressing said material therein, and a continuously-actuated drive-shaft arranged concentrically of said supports and adapted to be operatively connected alternately to the movable support and to the said devices mounted on the stationary support.

805,266. Cutting-Wire Attachment for Clay-Cutting Machinery. William R. Cunningham, Bucyrus, Ohio, assignor to The American Clay Machinery Company, Bucyrus, Ohio, a Corporation of New Jersey. Filed Aug. 17, 1905.

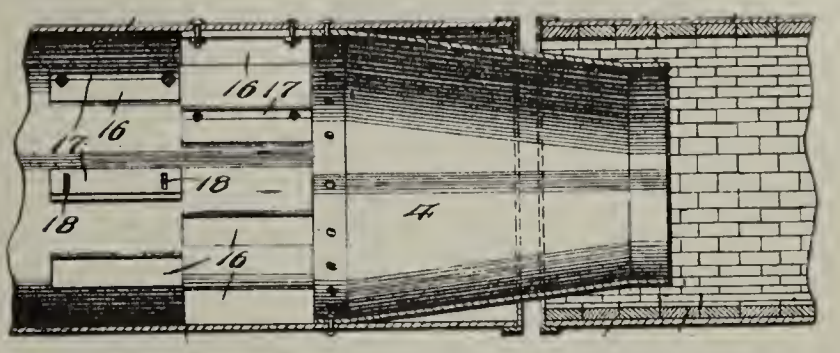
Claim.—A wire attachment of the character described, comprising means for holding one end of the wire, and a pair of independently-pivoted jaw members between which the opposite end of said wire is gripped.



A cutting mechanism for a brick and tile cutting machine, said mechanism including a wire having plain ends, means for securing one end of the wire, and means for securing the opposite end of the wire said last-named means comprising a pivoted lever having an offset seat portion and a second pivoted lever carried by the first lever and having substantially a cam-shaped head between which and the said portion the end of the wire is gripped said first lever capable of movement to stretch the wire after it is gripped.

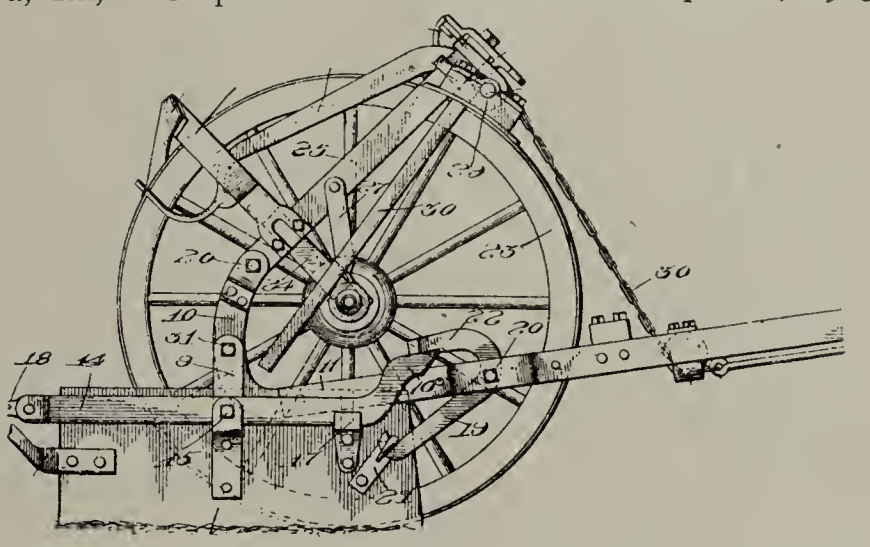
805,213. Rotary Kiln. James H. Logan and William H. Simmons, Fenton, Mich. Filed July 25, 1905. Serial No. 271,225.

Claim.—A kiln comprising longitudinally-aligned receiving and delivery sections, the receiving-section being adapted to receive the material in a wet state and provided with



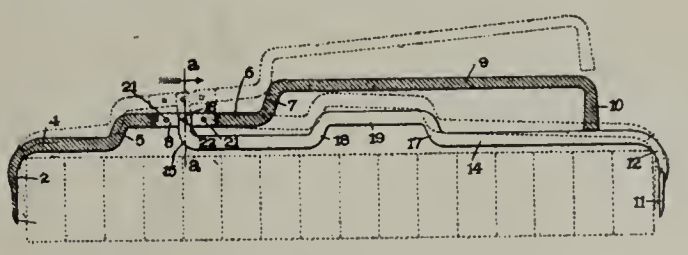
agitators adjustable to lie at different angles to the axis thereof and agitate said material, and the delivery-section being adapted to receive the dried matrial from said rceiving-section for calcining such dried material, the sections being in communication for the passage of waste heat from one section to the other, a chute within the outlet end of the receiving-section and having a contracted end projecting into the inlet end of the receiving-section, and means for rotating the sections at varying speeds.

805,258. Wheeled Scraper. James M. Brooks, Molena, Ga., assignor to Western Wheeled Scraper Company, Aurora, Ill., a Corporation of Illinois. Filed Apr. 22, 1905.



Claim.—An apparatus of the class described, comprising a scraper-pan, a carriage therefor, a lever fulcrumed on said carriage, said pan being suspended from one end of said lever, and draft means connected with the other end of said lever for raising the pan by the draft of the team without progressive movement of the apparatus.

805,780. Brick-tongs. William R. Cary and Charles R. Cary, Anthony, Kans., assignors of one-third to Hugh M. Pantier, Anthony, Kans. Filed March 3, 1905.



Claim.—A device of the class described comprising two pivotally-joined members, one of which has its opposite ends bent to extend in opposite directions and one of said ends constituting a holding-jaw and the other a pivotal element, and the other of which has its opposite ends bent to extend in the same direction and one of said ends constituting a holding-jaw and the other a stop which is arranged to abut against the remaining member to limit the opening movement of said members.

SAND-LIME MADE IN MICHIGAN IN 1860.

Although the manufacture of sand-lime brick is considered a new industry in the state of Michigan, as a matter of fact it is really one of the oldest. A sand-lime brick factory was in operation at Marquette as far back at the 60's, at about the time of the fire which devastated the city in 1868. There are a number of buildings standing in Marquette today the walls of which are of sand brick manufactured at the Donkersley factory. The store building now occupied by B. Neidhart & Co., South Front street, was the first building to be constructed after the fire of '68, and sand brick was the material used. The old library building on Spring street in the rear of the First National bank building, the First Presbyterian church, and several other buildings on Main street were built from sand brick. The present roundhouse of the Duluth, South Shore & Atlantic is also among the buildings constructed of this material, and which have stood through many years of service. This building was used by the Marquette, Houghton & Ontonagon railway before it became the property of the South Shore, and has survived more wear parhaps than any of the other buildings made from this material.

Marquette's first sand-lime brick factory was financed and established by Cornelius Donkersley and S. P. Ely, both of whom were connected with the railway interests here. S. P. Ely was a much traveled man, and the Marquette factory was in duplicate of one of the small factories Mr. Ely visited while in Germany, and the German process of manufacture was used. The plant was built on the lake shore near the Picnic rocks, and was in operation several years before it was finally closed down. The brick turned out were large and cumbersome, and it was necessary to exercise considerable care in handling the product after it came from the mould, as they were of immense size and brittle when soft. The brick were dried in the sun, and it required a long time to manufacture a sufficient number for a building of even moderate size. Owing to this fact, builders were unable to get the brick as fast as wanted, and other materials were used instead, which is assigned as the reason for the suspension of operations at the factory.

The buildings constructed forty years ago of sand-lime brick are among the most substantial in the city, and have resisted the ravages of weather and wear like granite. The weight of the common brick in use today is about eight times less than the brick turned out from the Donkersley factory, and while modern sand-lime brick is submitted to greater pressure when manufactured, it is doubtful if they will prove more durable than those made under the old process.

It was the intention of the promoters of the Donkersley factory to manufacture brick for export to other cities, but the factory was never able to supply the local demand, and was forced to suspend business for this reason. The product of a modern sand-lime brick factory is solid enough to stand upon when it comes from the press. This is because of the great pressure which is put upon them and which machinery forty years ago could not accomplish. The brick as they come four at a time from the press do not have to be handled on a pallet. They are quite firm as has been indicated by the statement that they will support the weight of the human body. As soon as the brick from the press fill an iron car holding 1,000 brick, the cars are run into a cylinder and subjected to a heavy steam presure and the action of chemicals for a period of ten to twelve hours. When they are taken from the cylinder they are ready to go into a building. The whole process of making brick takes less than two days, where it took weeks in former times.

QUARTER MILLION DOLLAR ADDITION TO BRICK WORKS SOON UNDER ROOF.

Remarkable progress is being made on the new quarter million dollar addition the Kittanning (Pa.) Brick and Fire Clay Company are erecting to their already large plant at Wickboro.

Although it is only little over a month ago since ground was broken for the new building yet at the present rate of progress the addition will be under roof in a few weeks, if the weather remains any ways favorable.

This is much better than the stockholders of the company had anticipated. They believed that if the new department would be ready for operation next summer it would be doing very well.

However, a large gang of bricklayers, laborers, etc., under the direction of Superintendent Latchaw have been keeping things a-humming and the casual visitor at the scene of the improvements cannot help but be impressed with the speed with which they have been carried along, and this, too, in spite of the inclement weather that prevailed several days during the last four or five weeks.

All of the excavating has practically been finished, although there will be more or less grading to be done for a long time to come on the grounds, and the retaining wall at the upperside of the proposed main building has been partly erected, while bricklayers are busily engaged on the erection of the dry sheds, which will be located at the south end of the building.

Three of the new kilns—there will be twenty-four—are under roof, and the fourth one has been begun. Work was started on the buildings in which the engines will be located, and in this structure alone 250,000 brick will be used. Tracks for hauling the brick used in the construction, from the present works to the scene of the improvements have been laid, and the brick are handled with comparatively little trouble.

A conduit from the present plant out into the new yards has been built, and branches from the new kilns are now being laid into it. Through this conduit, the hot air from the kilns will be driven by a large fan.

The extension of the company's railroad siding will be started soon, all the details having been satisfactorily arranged with the railroad officials.

A new barn has also been built just overlooking the company's works, and in it will be kept the horses and mules that are used about the plant. The new clay bank, which is to be operated in connection with the addition, has been started and the entry driven back some little distance.

About 150,000 feet of timber will be used in all these improvements and it is being cut from the company's own property, and sawed at the saw-mill, which has been located on the premises.

PROGRAM OF ILLINOIS CLAY WORKERS' ASSOCIATION, CHAMPAIGN, ILL., JAN. 23-24-25, 1906.

Tuesday Morning, Jan. 23.

Enrollment.

First session—Tuesday afternoon, Jan. 23.

Mayor's address, Shields A. Blaine; president's address, John W. Stipes.

Report of Committee on Clayworking School, by F. W. Butterworth, chairman; Wm. Hammerschmidt, Walter Colyer, John W. Stipes, D. V. Purington and Dr. A. L. Converse.

Relation of the State Geological Survey to the Clayworker, by H. F. Bain, director of Illinois State Geological Survey, Champaign.

Drain Tile and Tile Drainage, by Walter D. Pratt, Earlville.

Some Ways in which the University Offers to Help the Clayworker, by Prof. C. W. Rolfe, director of School of Ceramics, Champaign.

Economy in Steam Power, by Warren Ittner, Belleville.

General discussion—Tile Drainage and Its Benefits. Which Is the Better: Deep or Shallow Drainage?

Second Session—Wednesday Morning, Jan. 24.

Observations and Notes Gleaned on Visits Among the Clayworkers of Illinois, by Ross C. Purdy, Instructor in Ceramics, Champaign.

The Clay Building Block Industry—Its Death and Resurrection, by Martin W. Lauer, Chicago.

Sewer Pipe: Its Properties and Requirements, by Prof. A. N. Talbot, director of Department of Theoretical and Applied Mechanics, Urbana.

Firebrick and Other Refractory Products, by Arthur James Aubrey, St. Louis, Mo.

The Requirements of a Modern Drain Tile Plant, by J. M. Powell, Brooklyn, Ind.

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General discussion—What is the best method of drying soft mud brick in medium sized plants?

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Sewer Pipe Manufacturers' Trouble, by A. W. Gates, Monmouth.

The Esthetic Possibilities in the Use of Clay Products in Architecture, by Dean J. M. White, College of Engineering, University of Illinois, Champaign.

(Illustrated by lantern slides the construction of buildings in Europe and America).

Stoneware Glazes, by Elmer Ellsworth Spencer, Macomb.

The Origin of Clays—By H. B. Fox, Instructor in Geology, University of Illinois, Urbana.

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General discussion—Common and Paving Brick vs. Pressed Brick for Exterior Walls.

General discussion—The Maximum Absorption Allowable in Brick Used for Building Purposes.

Banquet Wednesday night at Hotel Beardsley.

Fourth Session—Thursday Morning, Jan. 25.

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A Modern Clay Manufacturing Plant, by H. C. Morrow, Whitehall.

Advantages of Brick Pavements, by Prof. Ira O. Baker, director of Civil Engineering Department, University of Illinois.

Clay Products in Our Recent Fires, by W. D. Gates, Terra Cotta.

General discussion—Paving Brick vs. Asphaltum.

General discussion—What is the Best Method of Laying the Brick at Street Intersections?

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General discussion—Using Cement as a Filler, What Should Be Used for Exposition Joints, What Distance Apart and How Thick?

Report of committees. Report of Secretary and Treasurer.

Election of officers.

Thursday Afternoon, Jan. 25.

Thursday afternoon will be devoted to a trip to the plant of the Western Brick Company at Danville. This is one of the largest plants in the United States, making both building and paving brick (stiff and soft mud). The capacity is 250,000 brick daily. Over 60 kilns are in operation. The shale is stripped by hydraulic process, two steam shovels are operated in the pit and two donkey locomotives carry the shale to the incline, where it is hoisted to the plant. The drying is entirely by waste heat from the cooling kilns.

The trip will be made on special interurban cars, which will start at the hotel and stop at the plant, returning after plant is inspected.

Another trip will be to the university. Special cars will be provided.

Headquarters at Beardsley Hotel. Write for your reservations in time. Meetings will be held at Elks' Auditorium.

Space in exhibit room can be obtained by application to the secretary. Models of clayworking machines and appliances and samples of clay products and materials are requested to make the display effective. These will subsequently be removed to the university for exhibitive purposes.

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Joe McCusker is president of the company and perhaps the largest stockholder. When seen regarding the matter, Mr. McCusker said:

"We have decided to close down for three months for the reason that home people will not support a home institution. At present we have on hand 1,250,000 brick and we would rather close down the yard than sell them at a loss. Before the Muskogee yard began business contractors were paying from $8.00 to $8.50 a thousand for their brick f. o. b. We reduced the price to $7.00 and today will deliver brick to any part of the city, in as much at 25,000 lots, for that price. I do not know what outside companies get for their brick, but the freight rate from Coffeyville or Iola, Kans., is from $3.50 to $4.00 a thousand. I do not make charges against any other company, but it is a well known fact that some of the older companies can afford to lose a few dollars on a thousand of brick, or rather will do so, to crush out a competitor."

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GEORGE H. HARTWELL, Editor.

SUBSCRIPTIONS.

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Papers are not stopped at the end of subscriptions unless the subscribers order them so and pay up the arrearages.

ENTERED AT THE CHICAGO POST OFFICE AS SECOND-CLASS MATTER.

Vol. XXVII. DECEMBER 30, 1905. No. 12

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The Eighth Annual Meeting of the American Ceramic Society will be held in Philadelphia, Pa , February 5-6-7, 1906. Headquarters at the Continental Hotel.

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It takes a soft man to spread himself successfully.

A word to the wise guy who knows it all is a dangerous thing.

A coward is a man who knows he is wrong but refuses to admit it.

Now is the time to subscribe to the only semi-monthly clay journal in America. 'Tis true the price is the same, that there are no premiums coming to you for so doing, but think you are getting the worth of your money—twenty-four copies for one dollar; stamps or currency.

The vast building operations in 1905 set a new record for Chicago, exceeding by nearly $400,000 the huge total of 1892, that year of feverish activity just preceding the world's fair, which to date held the first place. Final figures for 1905 are $63,463,700 as against $63,463,400 for the world's fair year. The greatest permit taken out for the year was for the magnificent new building of the Commercial National Bank, at Clark and Adams streets; its cost will be $2,600,000. The second largest single permit taken out in the history of Chicago. When it is considered how greatly the figures of 1892 were augmented both by the approaching world's fair and the speculative real estate boom which was then upon the city, the figures of 1905, which reflect entirely normal conditions, testify in the most convincing manner to the city's remarkable growth and its prosperity. Not only is the city of Chicago prosperous but the whole country. Every little town, hamlet or city is experiencing a share of the prosperity, and the prospects for 1906 are as bright as could be dreamed of. Nothing but the speculative work of Wall street or some great calamity can possibly mar or injure the continuance of prosperity for the year 1906.

The manufacturers of common brick of Chicago, the second largest market for this commodity in the United States, had a splendid year. They made 688,000,000 common brick during the year just closing. It is about 200,000,000 brick in excess of the previous year. Chicago builders used all of them except about 140,000,000 brick and the manufacturers are carrying over about 150,000,000, which is about the usual number and the same amount as was carried over last year. The amount received for the brick sold in Cook county will average $6.50 per thousand, perhaps a little more, as the prices were quite stiff the last half of the year. The increase in the production is 46 per cent.

The pressed and fancy brick dealers' and jobbers' sales totaled 65,000,000 face brick. This is over sixty per cent larger than last year. The average cost is about $22.00 per thousand. All of these brick were used in Cook county, or Chicago and vicinity, with the exception of 15,000,000.

The fire brick industry advanced fully twenty-five per cent; 26,000,000 of this kind of brick were consumed by Chicago industries within the year. No labor troubles were encountered.

POTTERY COMPANY ORGANIZED.

Monmouth, Ill., is to become headquarters for a gigantic pottery combine with a capital stock of $1,250,000. It will include the output and distribution of the products of many prominent potteries of the West. W. D. Brerton of the Monmouth pottery will head the new organization. The financial manager will be James H. Eckels of Chicago and the promoters A. D. Philpot and Richard Eastman.

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Now is the time to subscribe to the only semi-monthly clay journal in America. 'Tis true the price is the same, that there are no premiums coming to you for so doing, but think you are getting the worth of your money—twenty-four copies for one dollar; stamps or currency.

The vast building operations in 1905 set a new record for Chicago, exceeding by nearly $400,000 the huge total of 1892, that year of feverish activity just preceding the world's fair, which to date held the first place. Final figures for 1905 are $63,463,700 as against $63,463,400 for the world's fair year. The greatest permit taken out for the year was for the magnificent new building of the Commercial National Bank, at Clark and Adams streets; its cost will be $2,600,000. The second largest single permit taken out in the history of Chicago. When it is considered how greatly the figures of 1892 were augmented both by the approaching world's fair and the speculative real estate boom which was then upon the city, the figures of 1905, which reflect entirely normal conditions, testify in the most convincing manner to the city's remarkable growth and its prosperity. Not only is the city of Chicago prosperous but the whole country. Every little town, hamlet or city is experiencing a share of the prosperity, and the prospects for 1906 are as bright as could be dreamed of. Nothing but the speculative work of Wall street or some great calamity can possibly mar or injure the continuance of prosperity for the year 1906.

The manufacturers of common brick of Chicago, the second largest market for this commodity in the United States, had a splendid year. They made 688,000,000 common brick during the year just closing. It is about 200,000,000 brick in excess of the previous year. Chicago builders used all of them except about 140,000,000 brick and the manufacturers are carrying over about 150,000,000, which is about the usual number and the same amount as was carried over last year. The amount received for the brick sold in Cook county will average $6.50 per thousand, perhaps a little more, as the prices were quite stiff the last half of the year. The increase in the production is 46 per cent.

The pressed and fancy brick dealers' and jobbers' sales totaled 65,000,000 face brick. This is over sixty per cent larger than last year. The average cost is about $22.00 per thousand. All of these brick were used in Cook county, or Chicago and vicinity, with the exception of 15,000,000.

The fire brick industry advanced fully twenty-five per cent; 26,000,000 of this kind of brick were consumed by Chicago industries within the year. No labor troubles were encountered.

POTTERY COMPANY ORGANIZED.

Monmouth, Ill., is to become headquarters for a gigantic pottery combine with a capital stock of $1,250,000. It will include the output and distribution of the products of many prominent potteries of the West. W. D. Brerton of the Monmouth pottery will head the new organization. The financial manager will be James H. Eckels of Chicago and the promoters A. D. Philpot and Richard Eastman.

ACCIDENTS, DAMAGE[illegible]

August Fuller, a brickmaker employed [illegible]rds at Sayreville, N. J., died suddenly on the street.

John F. Martin, one of Arthur, Ill., prominent citizens, and a brickmaker, suffered a stroke of paralysis.

The Evansville (Ind.) Pressed Brick Co. has sued Thomas Bridges & Sons, Wabash, Ind., for $11,180 for brick furnished at Paducah, Ky.

John Thorley was instantly killed at the Cleveland Brick Co.'s plant at Canton, Ohio, by being caught in a shafting which he had devised himself.

A mechanic's lien of $9,800 has been placed on the property of the Janesville (Wis.) Granite Brick Co., by the H. Huennekes Co., of New York.

John Haggerty was awarded $3,500 damages against the St. Paul (Minn.) Brick Co. on account of his son's getting his fingers caught in the brick machine.

An award of $7,500 has been granted to the Manitowoc (Wis.) Clay Product Co. for damages caused by the C. & N. W. Ry. crossing their leased property.

A verdict of $2,500 was given to William Blonski, a 14-year-old boy, against the American Enamel Brick & Tile Co., South River, N. J., for injuries sustained to his wrist.

The bankruptcy proceedings against the West Market Brick Co., Louisville, Ky., has been dismissed and the affairs of the company will be wound up outside of the court.

The sheriff has taken possession of the holdings of the J. M. Rumbaugh Brick Co., in Westmoreland and Alleghany counties, Penssylvania. The suit was brought by Lucien Clawson, trustee.

Callie Dickinson has begun suit for $10,000 damages against the Danville (Ill.) Brick & Tile Co. for the death of her husband, who was a teamster in the employ of the company and was struck by a piece of shale and died soon after.

OBITUARY.

Patrick H. Cone, a brick manufacturer at Lewistown, Idaho, died at his home Dec. 22nd.

Nicholas Oaks, aged 77 years, one of the earliest pioneers of Iowa City, Ia., and a brick and tile manufacturer, is dead.

James W. Tester, manager of the La Prairie (Quebec) Pressed Brick Co., died suddenly at Montreal, Canada, of heart trouble.

Daniel Robinson, the veteran brick manufacturer of Chester, Pa., died at his home, 511 East Broad street. He was 65 years old.

John R. Bainbridge, the well known brick manufacturer of Rushville, Ind., is dead. He was 87 years old. He is survived by a wife and four children.

Franklin Fritz, of the firm Fritz & Bros., terra cotta manufacturers, Philadelphia, Pa., died at his home, 5013 North Sixth street. He was 47 years old.

PROGRAM OF THE IOWA BRICK AND TILE ASSOCIATION.

Des Moines, Jan. 10th and 11th.

Wednesday Morning, Jan. 10th.

Enrollment of members. Appointment of committees.

Wednesday Afternoon.

Address of welcome, Hon. H. W. Mattern, Mayor of Des Moines.

Response—Harry de Joannis, Chicago.

Annual address by president—C. A. Rawson, Des Moines.

Manufacture of Hollow Bricks—O. C. Pixley, Des Moines.

Architectural Effects by Judicious Use of Clay Ware—Geo. E. Hallett, Des Moines.

Drain Tile—J. A. Wilson, Dows, Ia.

Thursday Morning, Jan. 11th.

Roll call of members and responses.

Report of committees.

Drainage Laws—D. A. Kent, Jewell, Ia.

Waste Heat—L. E. Rogers, Chicago.

Paving Brick and Pavements—W. H. Brecht, Des Moines.

Continuous Kilns vs. Down Draft Kilns—D. F. Morey, Ottumwa.

Relative Values of Cement and Clay Products—J. O. Reaver, Des Moines.

Gas Engines—Prof. G. W. Bissell, Ames, Ia.

Thursday afternoon will be devoted to the inspection of clay making plants of Des Moines. A banquet will be given at the Grant Club House Wednesday evening, at 7 o'clock. Meetings will be held in the lodge rooms of the Elks Club House, 5th street, between Locust and Grand avenue. Friday will be devoted to a trip to the Iowa State College at Ames. Headquarters of the Secretary are at Kirkwood Hotel.

L. W. Denison, *Sec.*, Mason City, Ia. C. A. Rawson, *Pres.*, Des Moines, Ia.

FIREPROOFING FOR THE WORLD.

The National Fireproofing Company of Pittsburgh has secured a large contract throught its London representatives for conduit, which is to be used for the purpose of carrying the electric lighting wires in the Charing Cross and Strand section of the British metropolis. A substantial South American order has also been received by the company, requisitioning for multiple conduit for the River Plate Telephone Company's system in Buenos Ayres.

A big shipment of material has just gone forward to Europe from the company's plants in the Pittsburgh district. This conduit is being consigned by order of the Belgium government for the Antwerp-Brussels telephone system.

In addition to securing a further batch of contracts for the fireproofing of London buildings by means of the hollow terra cotta floor arch reinforced with a metal truss—as largely used in Pittsburgh—the National company's New York offices have received information from the other side that following the successful test of the thin terra cotta partition by the British fire prevention committee interesting contracts have been taken for the partition to be used in some of the big buildings about to be erected in London As already noted, the Pittsburgh concern recently secured a number of contracts for terra cotta floor arches to be installed in theaters, warehouses, etc., in the British metropolis.

FIRE! FIRE!! FIRE!!!

The brick manufacturing plant of Jacob Reick and Fred Radle, at Millville, N. J., was destroyed by fire, causing a loss of $10,000.

The three-story brick building of the American Sewer Pipe Co., located in the east end, East Liverpool, Ohio, has been burned to the ground. The loss will be between $60,000 and $100,000.

Fire destroyed the west five-story building of the Delaware (O.) Clay Mfg. Company, and caused a loss of $40,000, with no insurance. It is supposed that the fire was caused from an overheated kiln.

WESTERN CLAY MANUFACTURING COMPANY TAKES OVER TWO PLANTS.

An important deal affecting a well known Helena, Mont., industry has been made upon the incorporation of the Western Clay Manufacturing Company of Helena, which filed its articles recently.

The incorporators of the concern are A. L. Smith, Charles S. Caird and Charles H. Bray, and the company is capitalized at $60,000. It was organized for the purpose of taking over the Kessler brick, sewer pipe and tile works near the city, and the Jacob Switzer Brick Works at Blossburg. The new company will take charge of these industries as soon as the details connected with the transfer can be completed. The amount involved in the deal is represented by the capital stock of the company, $60,000.

The following are the officers of the new company: President, A. L. Smith; vice-president and treasurer, Charles S. Caird; secretary and manager, Charles H. Bray.

The new company will employ about 150 men and will prove to be quite an industry.

REDUCED RATES ON BRICK AT TOPEKA.

According to the plan outlined to the state board of railroad commissioners, the Rock Island road will put into effect a new schedule of freight rates on brick to the two brick plants west of Topeka, Kan. The new rates are all reductions from existing rates, and affect only Rock Island traffic, as the brick plants are not reached by other lines.

The brick plant situated two miles west of Topeka, known as the Capital City Brick Company, will get a rate of 1 cent per 100 brick shipped to Topeka. This may put the men out of business who have been hauling the brick into town in wagons. The freight cars loaded with brick can be transferred to the city railway tracks, and hauled to almost every part of the city.

From the brick plant at Willard, the Rock Island wants to put in a rate of 3¼ cents per 100 pounds on pressed, and 1 2-3 cents on all other kinds. This will enable the Willard plant to get into town on a cheaper basis than formerly.

The Rock Island also proposes to put in a rate from Topeka to Holton of 3 cents per 100, and from Topeka to Smith Center of 7½ cents per 100. These are both reductions of about 1 cent from existing rates.

TH[redacted]SYSTEM FOR MAKING [redacted]-LIME BRICK.

A new catalogue has just been issued by the American Sand-Lime Brick Company, 77 Jackson boulevard, Chicago, of which John J. Mooney is the general manager. This is the largest and most complete catalogue that has ever been issued by any firm or company on this subject.

By looking at the different views of the plants illustrated that have been erected by this company one can see the complete system or mode of operation. The process of manufacture, the time of manufacture, the cost of manufacture, the margin of profit, the quality of brick, its durability, the absorption of moisture, the kind of sand, its color, the kind of lime, the fire-resisting qualities and the guarantee, cost and tests are all gone over and made perfectly clear to anyone interested. In writing for this catalogue mention this notice in the Clay Record.

EXTENSIVE IMPROVEMENTS MADE BY DENNY-RENTON CLAY COMPANY.

About $200,000 is being expended by the Denny-Renton Clay Company, Seattle, Wash., for improvements on their several plants. They have just completed a factory at Van Asselt, 80x120 feet. It is equipped with terra cotta machinery of the most modern type. The cost of this factory, including the machinery, is about $125,000. There is only one other terra cotta factory in the state, which is near Spokane.

"There is no truth in the report that they have moved a great deal of machinery from Taylor to Renton on account of having better clay at the latter place. There is scarcely any difference in the quality of the clay obtained at the two places. As a matter of fact they have made extensive improvements at the Taylor plant. These extensions will necessitate the employment of at least 200 extra men. Their present working force is about 600.

BRAZIL CLAY PLANTS PROSPEROUS AND WILL MAKE EXTENSIVE IMPROVEMENTS.

Every indication points to the fact that the clay industries of Brazil, Ind., are in a very prosperous condition, and the prospects for a larger business than ever next season are very bright. We are informed that the Chicago Sewer Pipe Company is installing a waste heat plant, involving a goodly size outlay in cash, and means a most important improvement to this already modern plant.

The Weaver Clay and Coal Company is also making some extensive improvements. The company is putting in some new machinery and converting their boilers into a battery. The dry room is to be greatly enlarged and arrangements made for manufacturing several new lines next year.

The Ayer & McCarel Company is also making some very extensive improvements; the plant is said to be enlarged almost double its present size.

The Sheridan Brick Works, we are told, is arranging to make some improvements, and will remodel several departments. It is also said that nearly every plant in the city will make imporvements this winter and spring.

THE NEW BRICK MACHINE OF THE CEMENT MACHINERY CO.

The Favorite sand cement brick machine has just been placed on the market by the Cement Machinery Co., of Jackson, Mich. It is the latest invention by Levi P. Normandin, the well known inventor of the Normandin block machine. It makes twenty brick at a time and is thus probably the most rapid hand machine in use. It is built very durably of cast iron and steel. Each machine has three standard designs of brick face, rock face, plain face and tool face, making 60 in all. The doors and tamper are counterbalanced for ease in operation. A good trade has already begun, although the machine is so new it has been seen by but few.

The company reports a good trade in its block machinery and mixers. The accompanying cut shows a tasteful little building constructed of the Normandin blocks.

GONZALES MAN FORCED TO WRITE A CHECK AND CASH IT.

A bold and well planned robbery occurred at Gonzales, Texas, the victim being A. A. Harwood, manager of the Sunset brickyards. A few minutes before 8 o'clock last night Mr. Harwood, who lives several blocks from the brick yard, was called up and notified by phone that some of the machinery was out of order and he was wanted. He went to the yard and when near the outside gate a man threw a pistol in Harwood's face and ordered him to throw up his hands. The man searched him for a pistol and finding none, made Harwood walk around to the office near the kilns.

The robber had forced a window when he went into telephone Harwood and also opened the door. He then searched Harwood and found $25 in his pocket. There were two safes in the office and Harwood was made to open one belonging to the Harwood estate. No money being found, Mr. Harwood was ordered to open the other safe. Mr. Harwood told him that the bookkeeper had the key and there was no money kept there.

The robber then made Mr. Harwood write a check for $40 and call one of his men from the kilns to take it up town to be cashed. He had already made Harwood telephone three saloons before he found one that could cash the check. Schleyer's saloon had answered Mr Harwood that they could cash it, and Mr. Harwood gave the check to Dan Parks, night foreman, and told Parks to go to Schleyer's saloon and get it. He brought the money back and Harwood told him to hand the money to the man, who was standing in the shadow, having put out the light in the office. The robber than left, after telling Harwood that he would walk up town with him if he was going to report to the sheriff.

Officers were notified and the man's track found, but there are so many people living and working about the brick yard that neither men nor dogs could follow them. The man had his face blackened, and Harwood says he was white.

HANDSOME CHRISTMAS GIFTS BY BRICK COMPANY PRESIDENT.

A. A. Gery, president of the United States Brick Co., Reading, Pa., presented to his brothers, F. W. and W. A. Gery, $25,000 each, in securities for service rendered by them to the Montello Brick Co. This is one of the largest gifts of an individual that has come to our notice.

All of the office employes of the Montello Brick Co. were presented with an extra pay day envelope as a Christmas gift from the corporation.

THE PATTERSON FOUNDRY AND MACHINE COMPANY'S BOOKLET.

The above company, stationed at East Liverpool, Ohio, the heart of the pottery industry of this country, has sent out a neat little booklet, which reads, in part, thus:

"The opinion of the user is the opinion of the man that knows. That our pug mills are the best upon the market is not only our own opinion, but the opinion of the many satisfied users of these machines. Our years of experience, coupled with the best material and the best workmanship money can buy, places these machines in a class of their own. The opinions expressed on the last page of this book tell the tale. Consider the matter fully, then write for prices."

The following are the officers of the concern: B. C. Simms, president; H. N. Harker, vice-president; J. H. Brookes, secretary; Monroe Patterson, treasurer; R. L. Cawood, manager.

CLAY PRODUCT MANUFACTURER INVENTS A CONDUIT CONNECTION.

A patent has been granted to Daniel E. Reagen, 317 North Eighth Street, Terre Haute, Ind., president of the Ayer-McCarel Clay Company of Brazil, for a conduit connection which he thinks is much better than any now in use. The dowel pin invented by Mr. Reagen has a web on each side which engage in the slotted apartment of the conduits and allows them to lay in perfect alignment without blocking, also to come in contact with each other, thus doing away with much of the cement jointing. Mr. Reagen intends to put his invention on the market in a short time.

THE JEFFREY CATALOGUE No. 20.

The Jeffrey Manufacturing Company, Columbus, Ohio, have just sent out Catalogue No. 20, which deals in coal handling machinery for mines. It is very exhaustive of the subject, and, as many clay mines are quite similar to coal mines, many good ideas can be gleaned from it. The conveying, screening and grinding is about the same in both.

From pages 70 to 76 of this catalogue are illustrated the Jeffrey Swing Hammer Crushers, all sizes and all styles and for all purposes. Page 83 illustrates tipples, operated either by steam or compressed air; pages 85 to 90 dump cars of all kinds, and from 108 to 113 conveyors or elevators.

If interested in this class of work, write to the company, stating you saw this notice in the Clay Record.

SAND OR LIME BRICK OR BLOCK NEWS.

The Federal Granite Brick Co., Sayre, Pa., has started up again.

Miami, Florida, is to have a cement brick plant, making them from the Miami rock and cement.

N. B. Hawkins, Kenmare, N. Dak., has bought a cement brick machine and will soon be turning out cement brick.

T. T. Wolfenden, P. O. Box 102, Union Springs, Ala., and others will organize a company to make sand-lime brick.

The Plant City (Fla.) Granite Brick Co. will commence the manufacture of sandlime brick by the first of next month.

A sand-lime brick factory is among the projects on foot at El Paso, Texas. Harry H. Bailey has the matter in charge.

The Columbus (O.) Granite Brick Co. plant on Dublin Ave. have turned out their first product which is very satisfactory.

Davidson Bros., Charleston, W. Va., contemplate the establishing of a sand-lime brick plant at that place, to make 10,000 brick per day.

The Hastings (Neb.) Pressed Brick Co. will resume operations, making sand-lime brick, the first of January. Several improvements have been made to the plant.

The Ventor Brick Corporation, Atlantic City, N. J., has been incorporated with $50,000 capital stock, by Alfred C. McClellan, Charles S. Moore and Frank Smathers.

G. E. Anthony, of Manistee, Mich., proposes to start the second sand-lime brick plant at Wichita, Kans., if there is anyone there who will take a one-half interest with him.

Oklahoma City (Okla.) parties are arranging to establish a cement brick plant there, using machinery of the Impervious & Indestructible Brick Co., of Watertown, N. Y.

The Memphis (Tenn.) Granite Brick Co. will increase its capital stock from $20,000 to $75,000 and double its facilities, besides preparing to make sand-lime blocks as well as brick.

The Sixex Brick Mfg. Co., Wichita, Kansas, on account of the demand has had to double the capacity of its plant so that they are now turning out 40,000 pressed brick every 24 hours.

The United States Brick Corporation, of which G. W. Bostowick is the general manager, Michigan City, Ind., is now turning out a high-grade sand-lime brick, operating under the "National" system.

The Cement Products Co., of Burlington, Wis., has been incorporated with $7,500 capital stock. The incorporators are W. G. Rasch, W. C. Diener and Geo. W. Waller. The company will manufacture cement blocks, brick and sewer pipe.

MISCELLANEOUS ITEMS.

O. J. Peltier, Aitkin, Minn., has sold his interest in the Peltier & Ryman brick works to Mr. Ryman and will locate elsewhere.

The St. Anne (Ill.) Brick and Tile Works, owned by Meiers & Mailloux, has had its banner year, and the factory is to be enlarged.

At a meeting of the directors of the Estacada Brick and Tile Company, Portland, Ore., it was decided to put in a dry kiln in the plant at Estacada.

The Alvin (Tex.) Brick and Tile Company has been incorporated with $20,000 capital stock. Incorporators are Lewis R. Sanders, W. H. Jones and B. L. Osgood.

Emmetsburg, Iowa, is assured a tile factory in the spring. Land has been arranged for and clays tested that will make a fine drain tile. Something like $25,000 will be used.

The Des Moines (Ia.) Clay Manufacturing Company, South Eighth street, will soon commence the manufacture of face brick, and the machinery is now being installed.

The plant of the Fond du Lac (Wis.) Brick Manufacturing Company has closed down, and during the cold weather proposes to install improvements costing $10,000.

The Johnson Brick Company, Kingston, N. Y., has been incorporated with $10,000 capital stock. Directors are R. G. Johnson, R. H. Johnson and R. T. Johnson, all of Kingston.

The Shawnee Flash Brick Company of Delaware was admitted to do business in Ohio, to locate in Columbus. It has $125,000 capital stock. W. O. Copeland will be the agent.

The Vulcan Clay and Brick Company, Wellsville, Ohio, has been incorporated with $40,000 capital stock by Julius A. Cohn, Frank McIlvaine, S. H. Hall, P. M. Smith and W. A. Sneidiker.

Bruce H. Campbell has been succeeded by Roy E. Keedy as secretary and manager of the Bruce H. Campbell Brick Company, Johnstown, Pa. The works for some time have been operating double time.

The Western Clay Manufacturing Company, Helena, Mont., has been incorporated with $60,000 capital stock. A. L. Smith is president, Charles S. Caird treasurer and Charles H. Brey secretary and treasurer.

The large plant of the Diamond Brick Company, Barberton, Ohio., is now the property of the American Sewer Pipe Company. O. C. Barber was the president and E. M. Buell, secretary-treasurer and manager.

The Northern Pressed Brick Company, Crookston, Minn., will enlarge their plant in the spring by the adding of sand mold brick machinery. It will be a complete new plant located some distance from the dry press plant.

The Acme Clay Company, New Cumberland, W. Va., has let a contract for the new buildings and machinery that, when installed, will double the production of the works. W. J. Chapman is the manager and owner of the concern.

Henry G. Haws, Johnstown, Pa., buys complete control of the Climax (Pa.) Brick Works.

Common brick on the Hudson River are selling from $9.25 low to $9.75 best grades.

The Macon Brick Co., 253 3rd St., Macon, Ga., will put in a stiff mud outfit making 50,000 brick daily.

The Nile (O.) Fire Brick Co., is placing an incandescent lighting plant for lighting both the new and old plants.

The Grinnell (Ia.) Brick & Tile Co. is soon to be incorporated and the capacity of the McHose works greatly increased.

O. Seifert, 287 1st Ave., Long Island City, N. Y., wants a large quantity alumina or clay free from iron. Dealers write direct to him.

A. F. Shotts, Mason City, Ia., is at the head of a syndicate who will erect a brick and tile plant near the city, costing $60,000 to $70,000.

E. R. Wiswell is spending several thousand dollars in improvements to his tile plant, adding new storage shed and dry pans and screens.

D. Strickland, 142 Edgewood Ave., New Haven, Conn., will install a new brick yard and is in the market for a machine, pallets and supplies.

E. L. Kinney has 12 acres of clay land between the Soo and G. N. Ry. tracks at Hankinson, N. Dak., and is having same tested so as to make brick.

Wm. Mellok, Tramway, Wis., is looking for an opening in a medium sized brick and tile works where he can invest some money and receive a position. He is a reliable brick maker.

The Hicks Clay Co., Roodhouse, Ill., has been incorporated with $10,000 capital stock to manufacture clay products. Incorporators: Charles T. Hicks, Henry C. Worcester and Charles W. Payne.

The Princeton (W. Va.) Brick & Lumber Co. has been incorporated with $10,000 capital stock. Incorporators: L. H. Perkins, Hugh G. Woods, E. W. Hale, Isaiah B. of Princeton and James Collins of Bramwell, W. Va.

Judge P. M. Smith, who owns 80 per cent of the stock of the Vulcan Brick Works, Wellsville, Ohio, has sold same to Julius A. Cohn of Pittsburg, who has been elected prcsident and manager. He has plans to enlarge and improve the works.

The Hicks-Long Pressed Brick Company, Providence, Ky., has been organized with $10,000 capital stock by S. Hicks of Providence and E. H. Long of Sturgis. New dry press machinery has been purchased and will be installed on the L. & N. Railway.

The Western Conduit Construction Co., Salt Lake City, Utah, has been incorporated with $100,000 capital stock. Patrick J. Donahue is president and manager; Thos. D. Pitts, vice-president, and G. R. Cleveland, secretary and treasurer. The company will manufacture a patent combined curb and electric wire conduit.

Alden A. Park, of Greenfield, has bargained for property at Deerfield, Mass., and plans to have a brick yard.

The Findlay (O.) Clay Pot Co. will resume operations with a full force of hands after a shut down of several months.

A Philadelphia syndicate will start a brick works on the Christiana River near Santon, Del. Excellent clay of different varieties has been found.

The Auburn (Pa.) Shale Brick Co. have bought land between Schuylkill Haven and Orwigsburg and will build a plant to make 50,000 brick per day.

Adams Brothers & Payne Co., Lynchburg, Va., are preparing to build in Fulton at Richmond, Va., a plant to make 25,000,000 brick annually and will maintain a branch office in Richmond.

The Southern Fire Brick & Clay Co., Montezuma, Ind., has been obliged to close down its works, throwing 100 workmen out of employment, on account of not being able to get cars to ship in.

The Preston Brick Works, Hornellsville, N. Y., have closed down for the winter on account of being unable to get shale. A great many necessary repairs will be made before the plant starts up.

The Fireproof-Penetrable Brick Co. has been incorporated with $150,000 capital stock at Portland, Maine. The officers are I. C. Libby, president; H. L. Greeley, treasurer, and F. I. Moore, all of Portland.

E. D. Buckman, of Estherville, Ia., has bought 12 acres of clay land at Buffalo Center and will build a brick and tile plant there, providing he can get the citizens and farmers in there to take a small interest.

August J. Muller, Washington, La., is forming a company to erect an up-to-date brick plant with a daily capacity of 30,000 brick, and would be glad to hear from brick machine manufacturers, dryers and supplies.

The Peerless Brick Machine Co., Minneapolis, Minn., has filed articles of incorporation with $50,000 capital stock. Officers are: L. W. Thayer, president; H. E. Storms, vice-president, and L. E. Storms, secretary and treasurer.

The Allentown (Pa.) Paving Brick Co. has installed in its plant at Guth's Station a new Corliss engine, 250 horsepower, new dryers, pug mills and cut-off table. Stephen P. Belcher, an experienced brick manufacturer, is in charge.

Elliott B. Johnson, proprietor of the Granger (Wash.) Brick Works, has formed a partnership with his brother under the name of Johnson Bros. and placed an order for a complete new brick making outfit to make 35,000 brick per day.

The Barber Asphalt Paving Co. has appropriated $125,000 to be used in erecting a paving brick plant at Des Moines, Iowa. Paul Beer has the work in charge. They will make 150,000 standard paving brick daily. The plant will be at So. 14th and Hillside Ave., on the site of the old Capital City Brick & Pipe Co.'s plant, which was bought by the Barber company.

CLAY LAND FOR LEASE.

On a 32 acre farm, 4 miles west of Macomb, Ill., containing 20 acres of a 10-foot vein of fine pottery clay, a 5x10-foot shaft in good repair at same. Will lease from one to ten years or longer at 10 cents per ton, weighed on ground and settled for monthly. Company to have access to any part of land for mining and digging clay. Also a vein of coal 25 to 30 feet below the clay to lease at ½ cent per bushel. For further particulars address

MILTON McDONALD,
Lock Box 39 P. R. 5, Colchester, Ill.

FOR SALE.

One complete brick yard plant, consisting of boiler and engine, stiff mud machine, rolls, automatic cut-off, shifting pulleys, belting. Complete equipment for a 25,000 capacity plant. A bargain if sold at once.

WM. W. THIRLBY,
Traverse City, Mich.

WANTED

A man to take charge and manage a brick and tile plant. He must thoroughly understand machinery, setting brick and drain tile and burning same. The plant is engaged in manufacturing stiff mud brick, dry pressed brick and drain tile. A permanent position to the right man. State age, experience, salary expected and full particulars. Prompt action required. Address.

FACTORY,
Care, Clay Record.

BRICK YARD FOR SALE.

Brick Yard for sale cheap. A bargain to the right party. Good market at hand. For further information address

BRICKMAKER,
Care Clay Record, Chicago, Ill.

FOR SALE CHEAP.

Freese Combination Brick Machine, 30,000 brick capacity, side-cut board delivery table, 60 horse-power Tubular Boiler, 50 horse-power Engine, 11,000 three-slat 10x36 pine Pilets, Trucks and Barrows. All in good condition. Will sell separate or whole. Address

JOHN POEHLEIN,
1600½ 18th St., Louisville, Ky.

FOR SALE.

Profitable running brick plant, 25,000 capacity. Ready sale for entire product. Owner has larger interests requiring attention

TERRA HAUTE PRESSED BRICK CO.
Terra Haute, Ind.

WANTED.

Wanted—A Four-Mold Dry Press, in good condition. Price must be reasonable. Address

T, care Clay Record,
Chicago, Ill.

FOR SALE.

For sale, reasonable, in condition—
One 5x18 foot Horizontal Tubular Boiler.
One No. 20A Penfield Hollow Brick Machine.
One 14 foot Pug Mill.
One Disintegrator,
One 40 foot Clay Conveyor, with 20 foot belt.
Forty Fire-proofing Dies, with two extensions, pullys, clutches and belting.
Reasons for sale, are making different ware.

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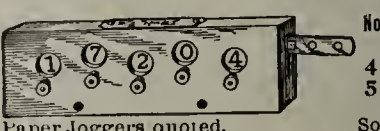

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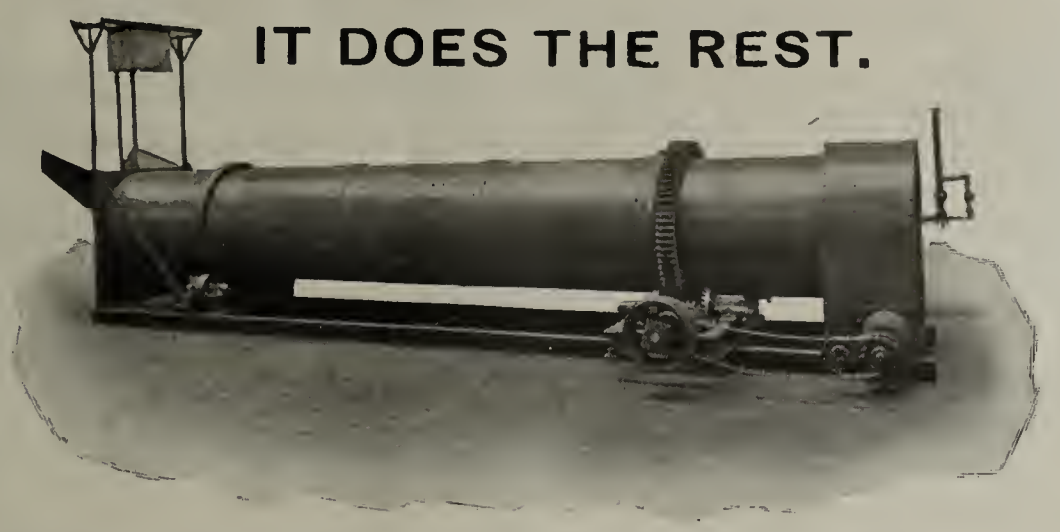

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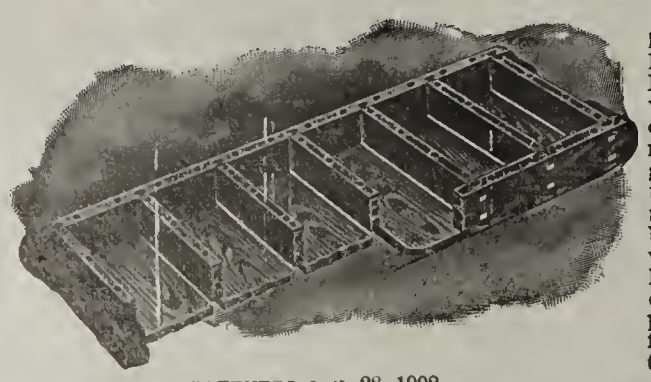

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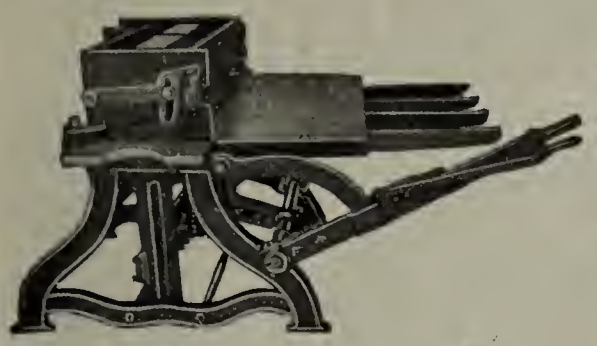

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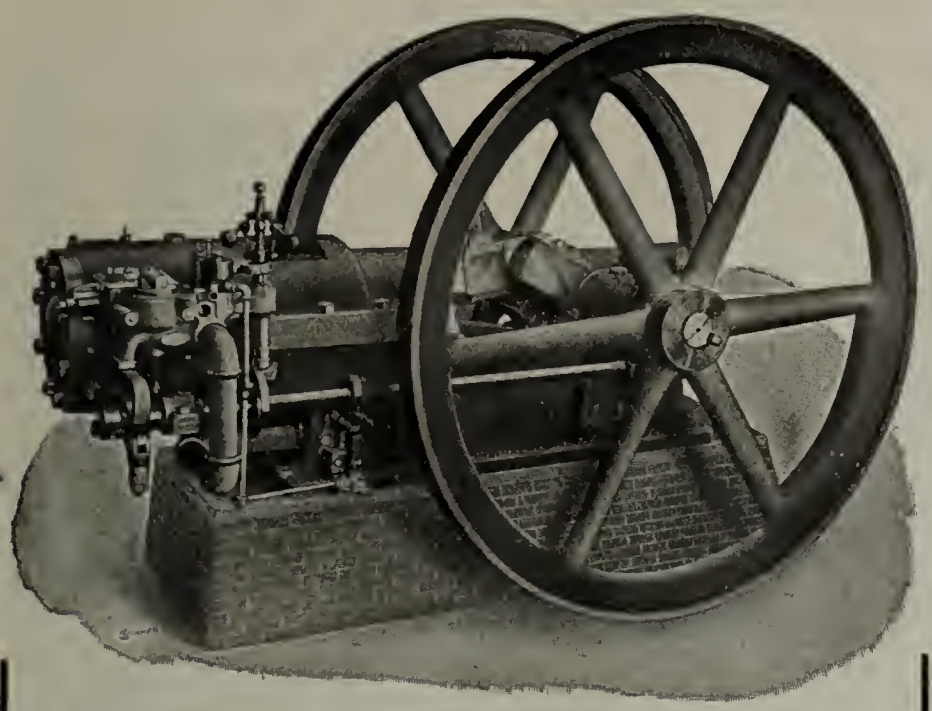

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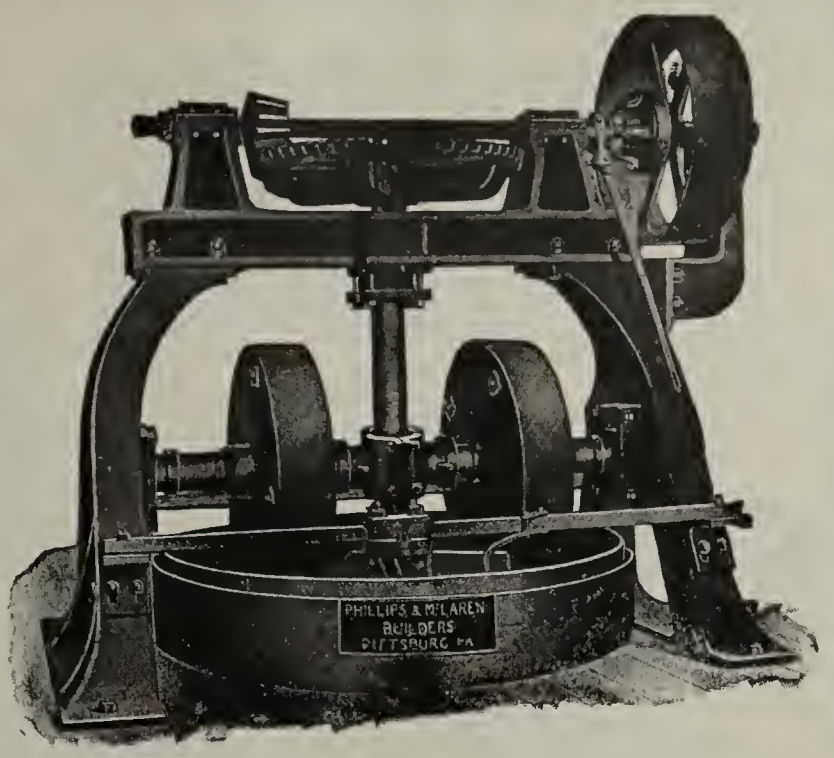

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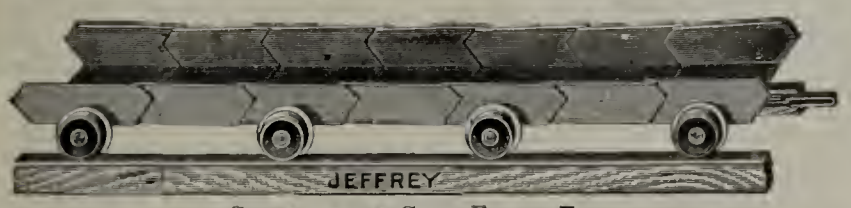

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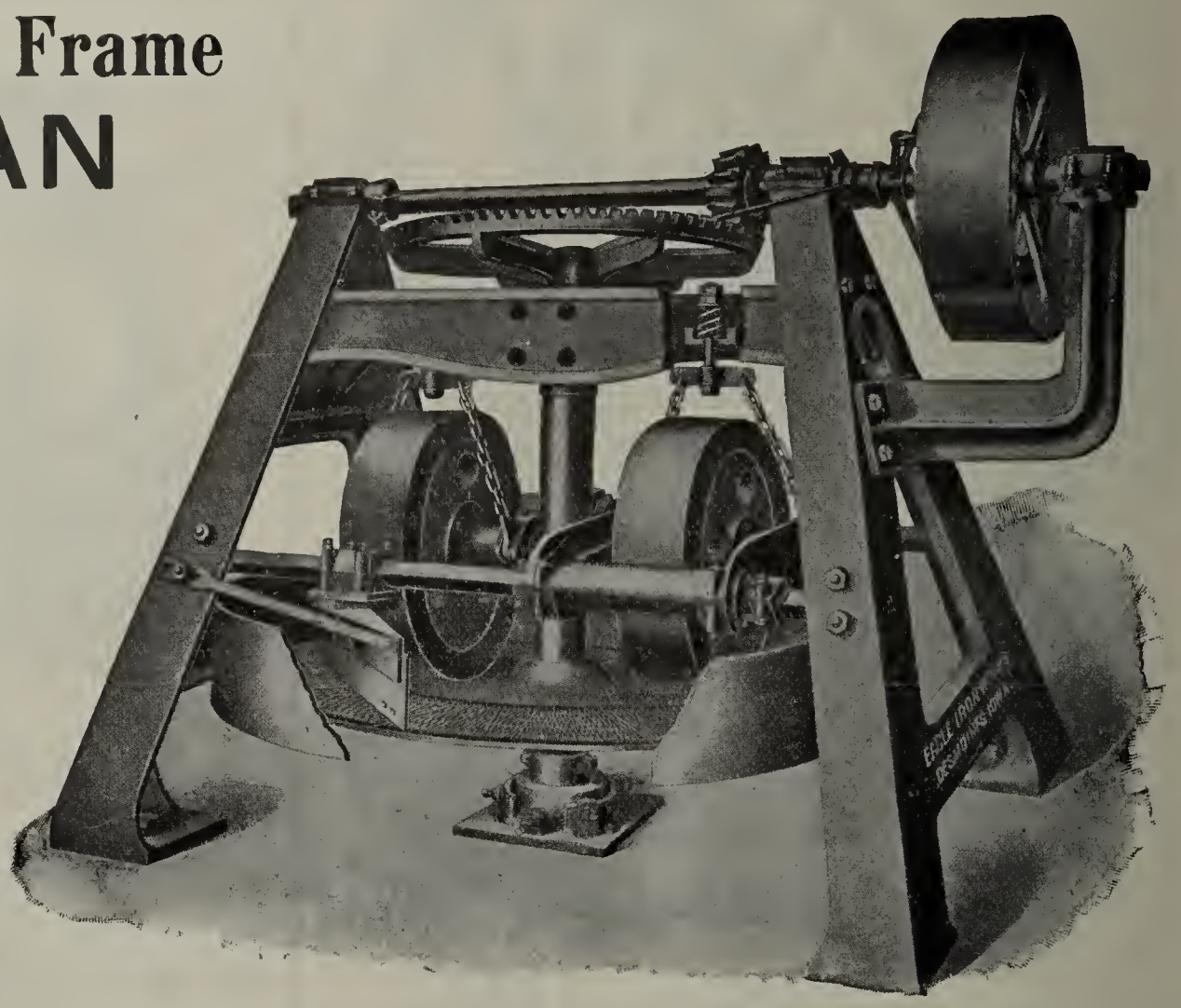

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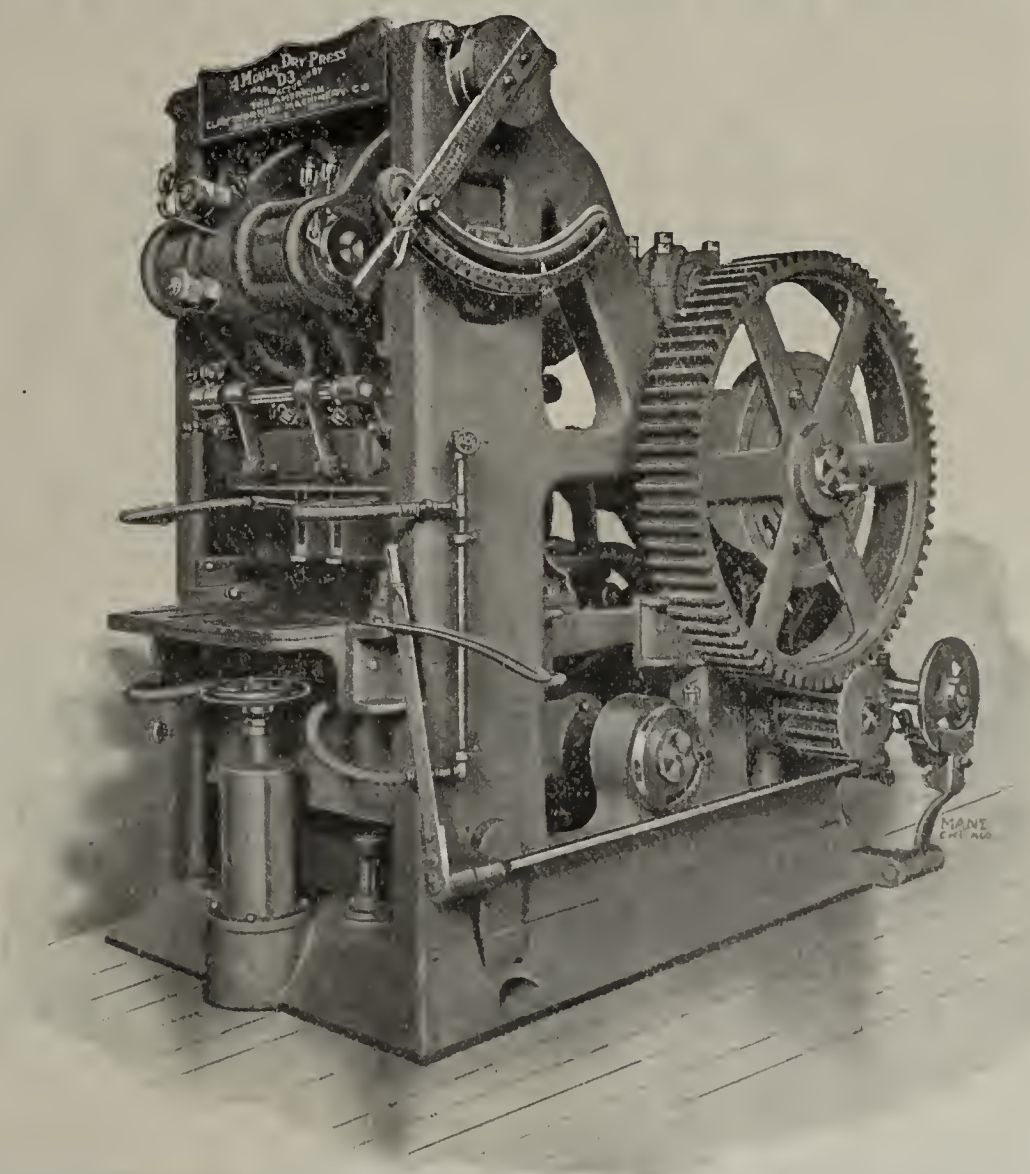

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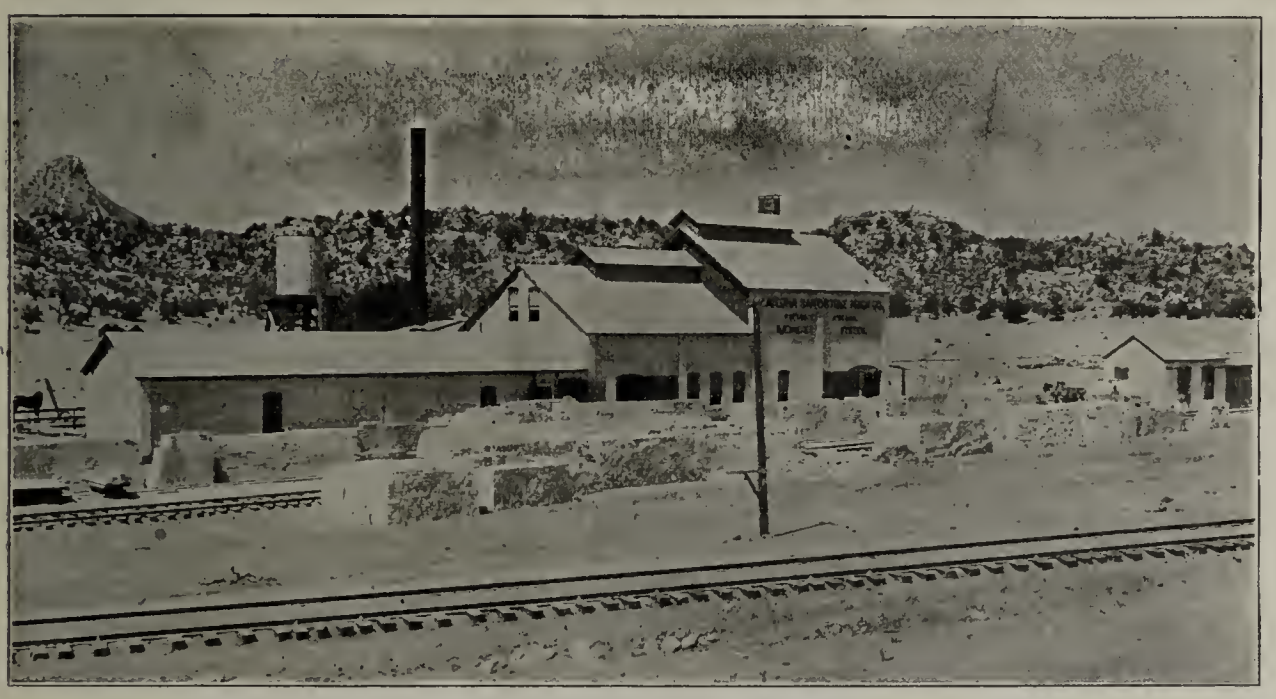

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Before the expiration of this year the total combined capacity of the factories erected and operated under the "Huennekes System" will be about 300 million bricks per annum—or a growth of about **2,000 per cent in one year.**

Remember the doubts and scoffings about the "**dry pressed brick**" but a few years ago and the money made by the pioneers in this business.

The Sand-Lime Brick Business is to-day in the identical state as the dry pressed brick business was but a few years ago.

All of our special machinery is manufactured in the United States by the foremost machine shops in their particular line of business, and are thoroughly tested, insured and guaranteed before leaving shops. All special machinery, as well as our methods and process are fully protected and covered by United States Patents. **Without the use of the same it has proved impossible to produce a high grade brick out of sand and lime in a commercial way at a low cost. The rapid growth of our business from 15 million brick per annum in 1903 to 150 million brick per annum in 1904** is not only a proof of the merits of the "Huennekes System." but also of the product itself.

Send for free booklet, tests and testimonials.

The original, oldest and only experienced **Engineering Firm** in the Sand-Lime Brick Industry.

H. HUENNEKES COMPANY

Engineers and Contractors for the
Erection of Sand-Lime Brick Factories.

MAIN OFFICES
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TALLEST SAND-LIME BRICK BUILDING IN THE U. S.
BRICK MADE ON OUR SAMSON PRESSES.

Semisteel Co.

Sand-Lime Brick

Plants Erected of any Capacity

"F. C. Tracy, Prest. J. H. Shoup, Supt. Silas Myers, Sec.
A. L. Courtright, Vice-Prest. Wm. Luken, Treas.

INDIANA SAND-LIME BRICK CO.

North Judson, Ind., Oct. 13th, 1905.

THE SEMISTEEL CO., Cleveland, Ohio
Gentlemen:

We have our plant in operation and have many orders on our books. We are very well pleased with the machinery which we purchased from you, and trust same will continue to be satisfactory, as we now feel more than ever that we made no mistake in buying your system.

Yours very truly,
(Sd) INDIANA SAND-LIME BRICK CO.
Per Silas Myres, Secy."

Have you any Sand?

If so, you need what we have.

Our System is used by the first Sand-Lime Brick Plant in the United States, and has been in continuous operation and has produced and sold more brick than any other single plant.

Send for information. We have equipped plants in all parts of the United States. We do not use cement or chemicals, and do not sell patent rights.

SEND FOR FREE BOOK.

We are not brokers, but operate our own foundry and machine shop.

WE MANUFACTURE

Special Sand Brick Presses
Hardening Cylinders
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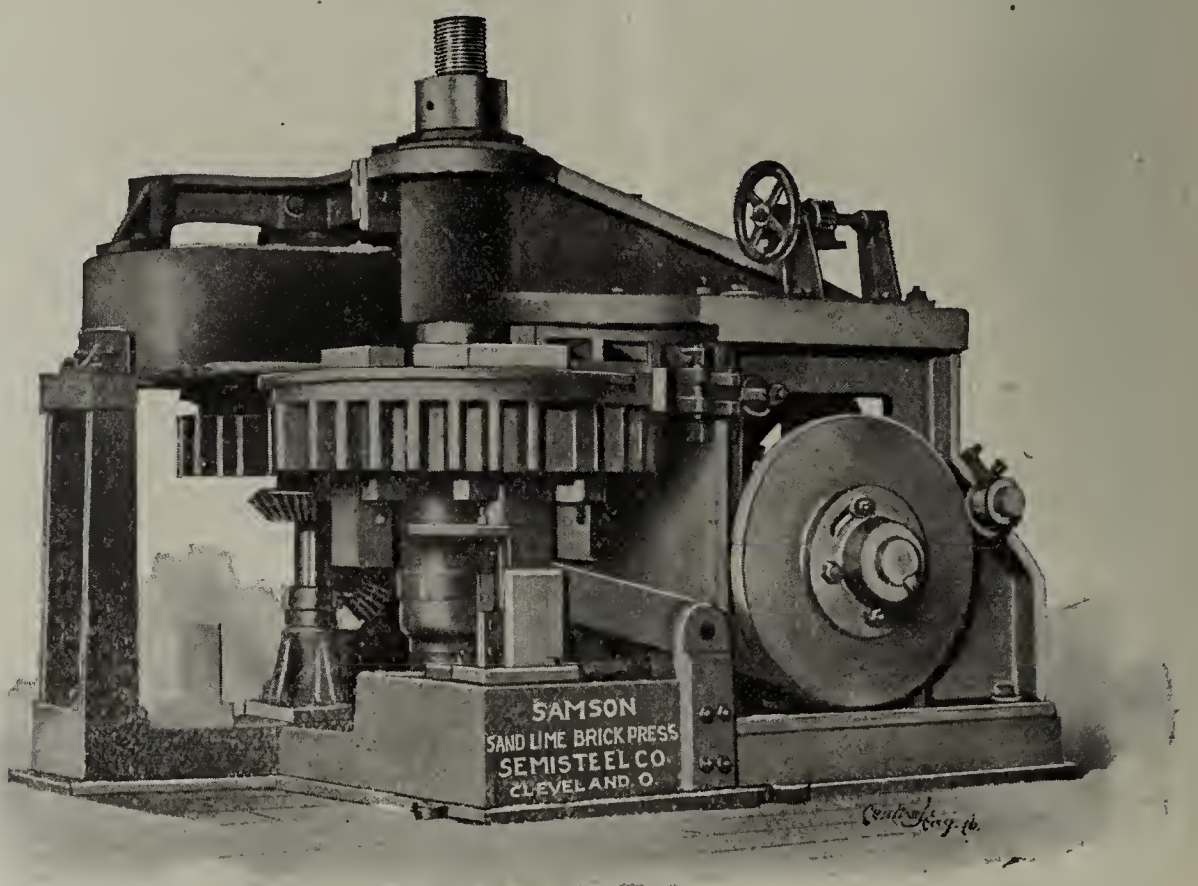

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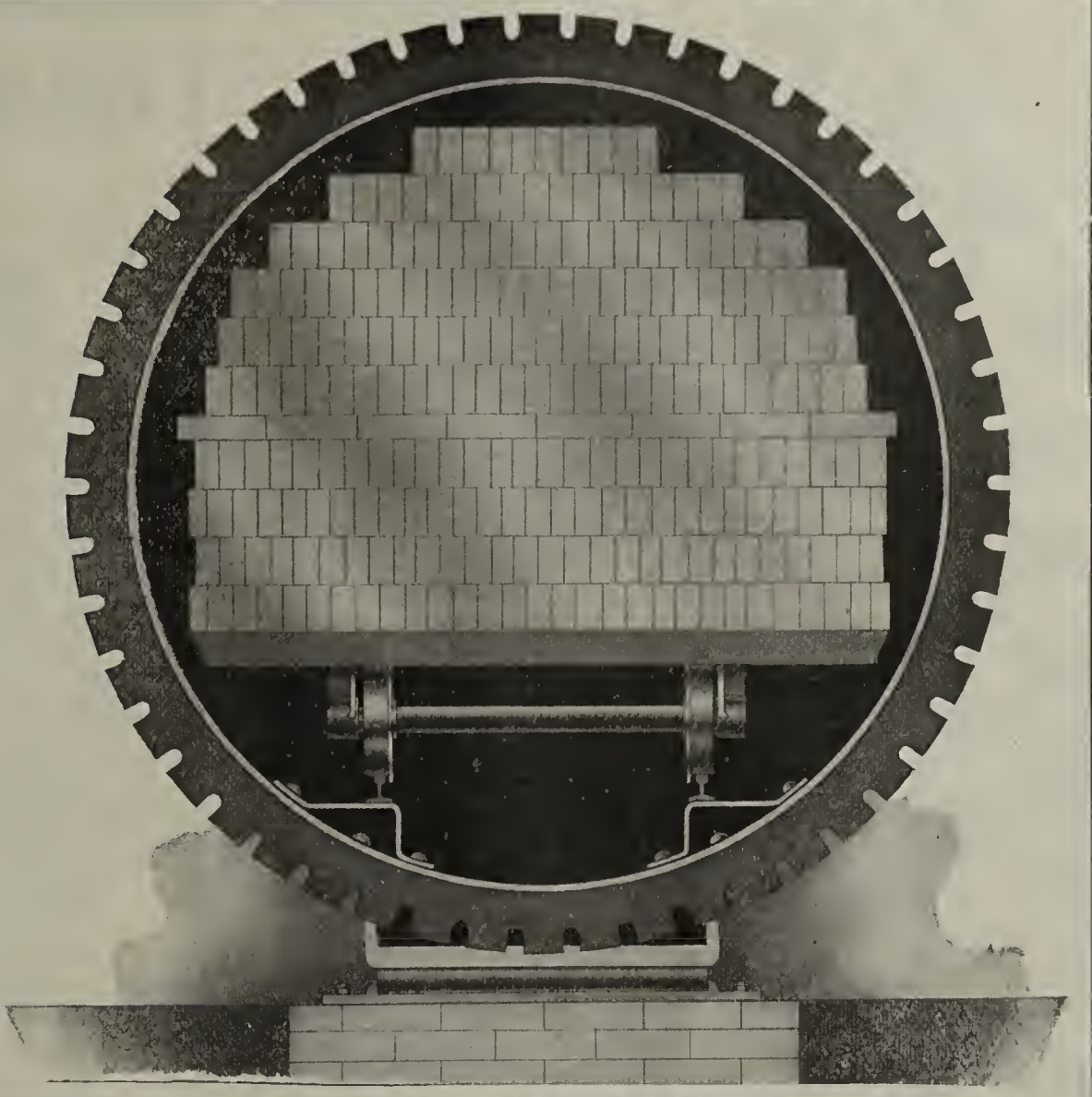
SAND-LIME BRICK MACHINERY

Our Sand-Lime Brick Machinery is at least a little better than any other. We have testimonials to show it. We build it all in our own factory and are sure of its quality. We are the only firm doing this. We will design and equip your entire plant, or will sell you parts of your equipment. Our catalog, describing and illustrating our full line, will be sent upon request.

We also build a full line of machinery and appliances for making Clay Products, Cement and Pottery, Dryer and Dryer Apparatus.

Everything we sell we make. We therefore know its quality to be right.



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HANDLE YOUR CLAY WITH ONE MAN AND

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Made In Four Sizes. Mounted on Car Wheels or Traction Wheels.

Type No. 3 Shovel—George Gynn Brickyard, Cleveland, O.

Especially adapted for brickyard requirements. The shovel operates in a complete circle, enabling material to be delivered at side or in rear at will. The Dipper is hung from a horizontally moving carriage and can be adiusted to cut to any desired level.

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Wire Cables used instead of Chains.
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Economical for brickvards 30,000 to 40,000 daily capacity.

Operated by one man for outputs up to 125,000 brick per day.

Write us for Catalogues and Information.

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AN IMPORTANT STEP

in the manufacture of

SAND LIME BRICK

One of the most important steps in the manufacture of **GOOD SAND LIME BRICK** is the shaping of the raw materials into brick form. Most of the processes for the manufacture of **SAND LIME BRICK** rely upon excessive pressure to accomplish good results.

This often leads to breakdowns and expensive delays since the presses are seldom constructed strong enough to withstand for any great length of time the excessive strain put upon them.

In making brick by the **"SCIENTIFIC SYSTEM"** all this is changed. Excessive pressure is not necessary owing to the way in which our materials are **PREPARED** before being fed to the press **COLUMBIA**.

Our **PRESS "COLUMBIA"** is so constructed that **EACH BRICK** receives individual treatment and therefore ample pressure. This is one of the reasons why **SAND LIME BRICK** made by our **"SCIENTIFIC SYSTEM"** is greatly superior in quality, strength and appearance to any other brick on the market.

If you are contemplating the erection of a **SAND LIME BRICK** plant or the installation of **SAND LIME BRICK** machinery, it will be well worth your while to investigate the

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SEND FOR BOOKLET No. 18

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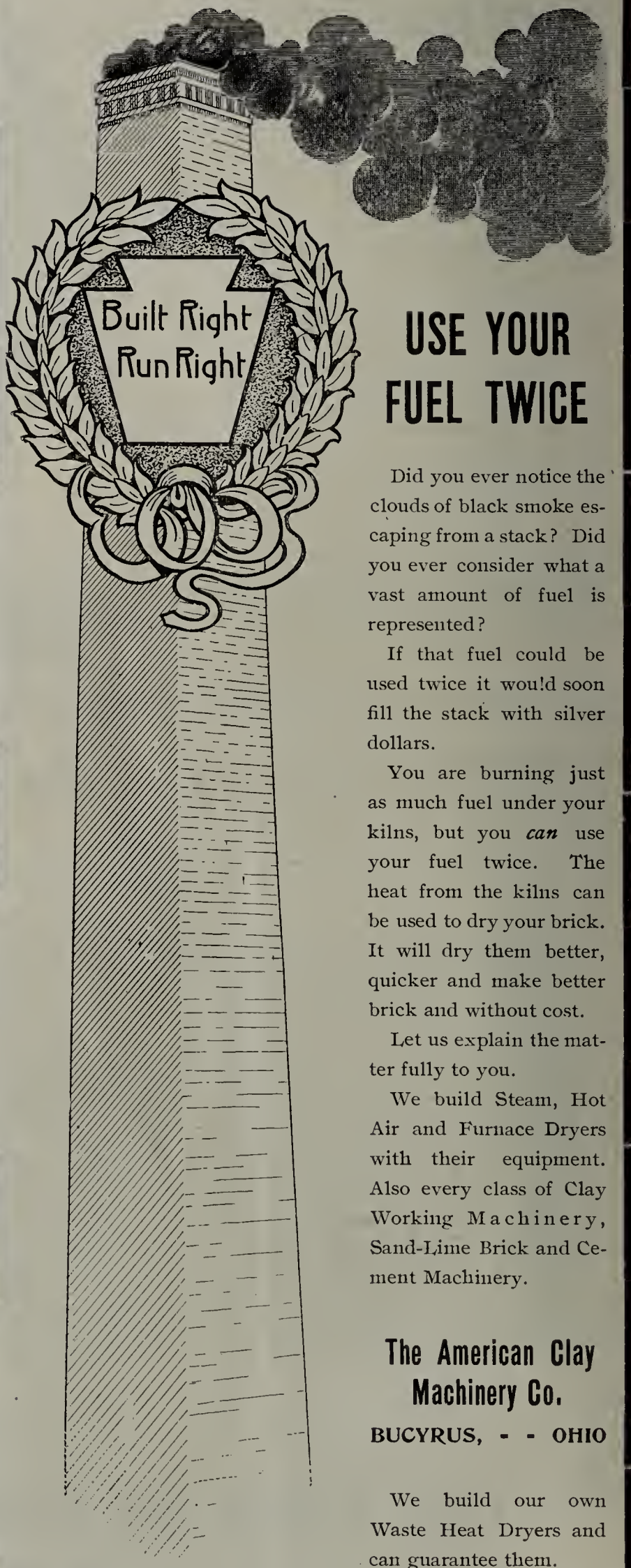

USE YOUR FUEL TWICE

Did you ever notice the clouds of black smoke escaping from a stack? Did you ever consider what a vast amount of fuel is represented?

If that fuel could be used twice it would soon fill the stack with silver dollars.

You are burning just as much fuel under your kilns, but you *can* use your fuel twice. The heat from the kilns can be used to dry your brick. It will dry them better, quicker and make better brick and without cost.

Let us explain the matter fully to you.

We build Steam, Hot Air and Furnace Dryers with their equipment. Also every class of Clay Working Machinery, Sand-Lime Brick and Cement Machinery.

The American Clay Machinery Co.

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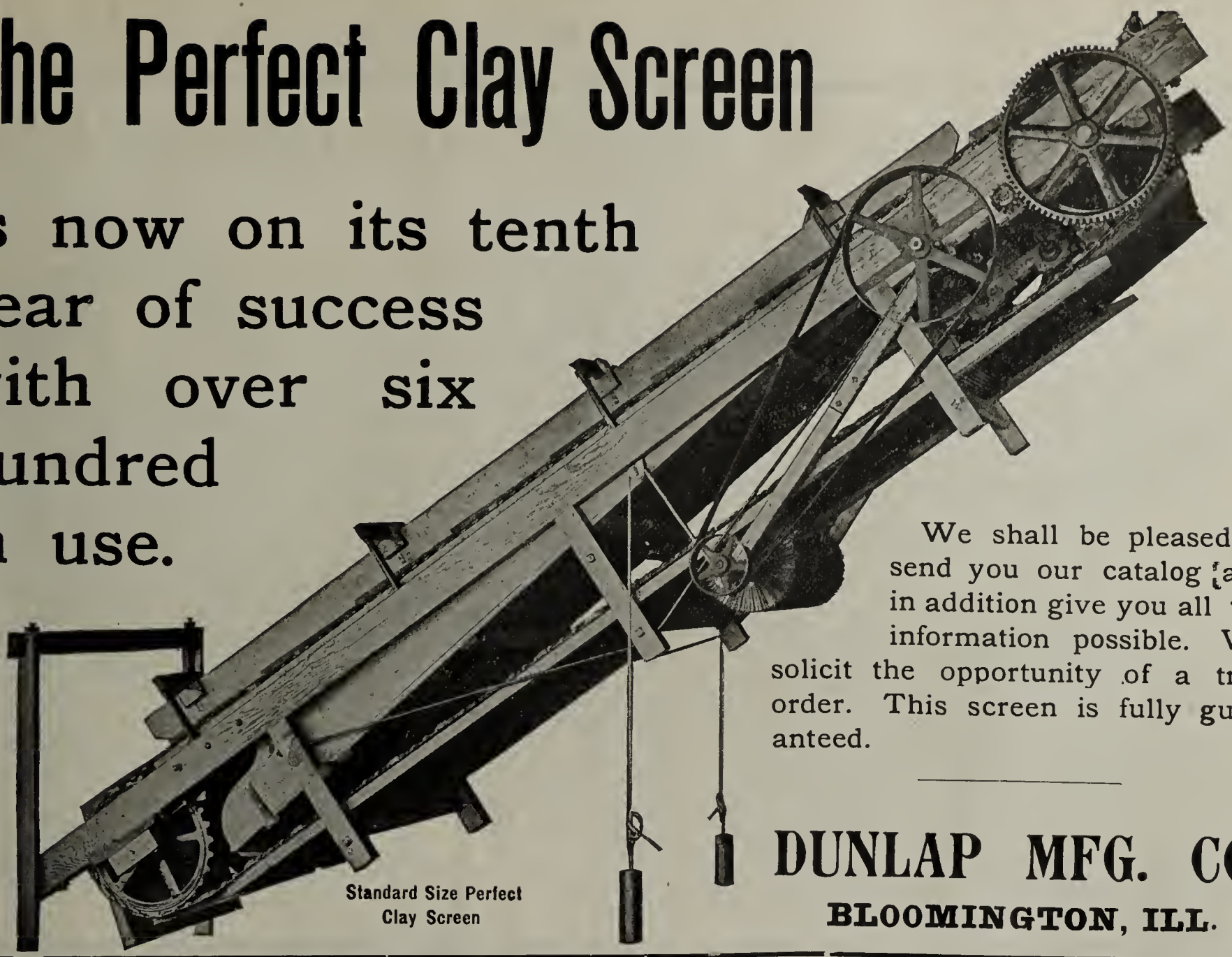
We build our own Waste Heat Dryers and can guarantee them.

The Perfect Clay Screen

Is now on its tenth year of success with over six hundred in use.



Standard Size Perfect Clay Screen

We shall be pleased to send you our catalog and in addition give you all the information possible. We solicit the opportunity of a trial order. This screen is fully guaranteed.

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THE NEW YORK BLOWER CO.'S... WASTE HEAT DRYER

Has saved more money to brickmakers than any other apparatus.

It is an investment that pays for itself in a short time.

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We will investigate any Waste Heat Dryer proposition and make plans and estimates free of charge.

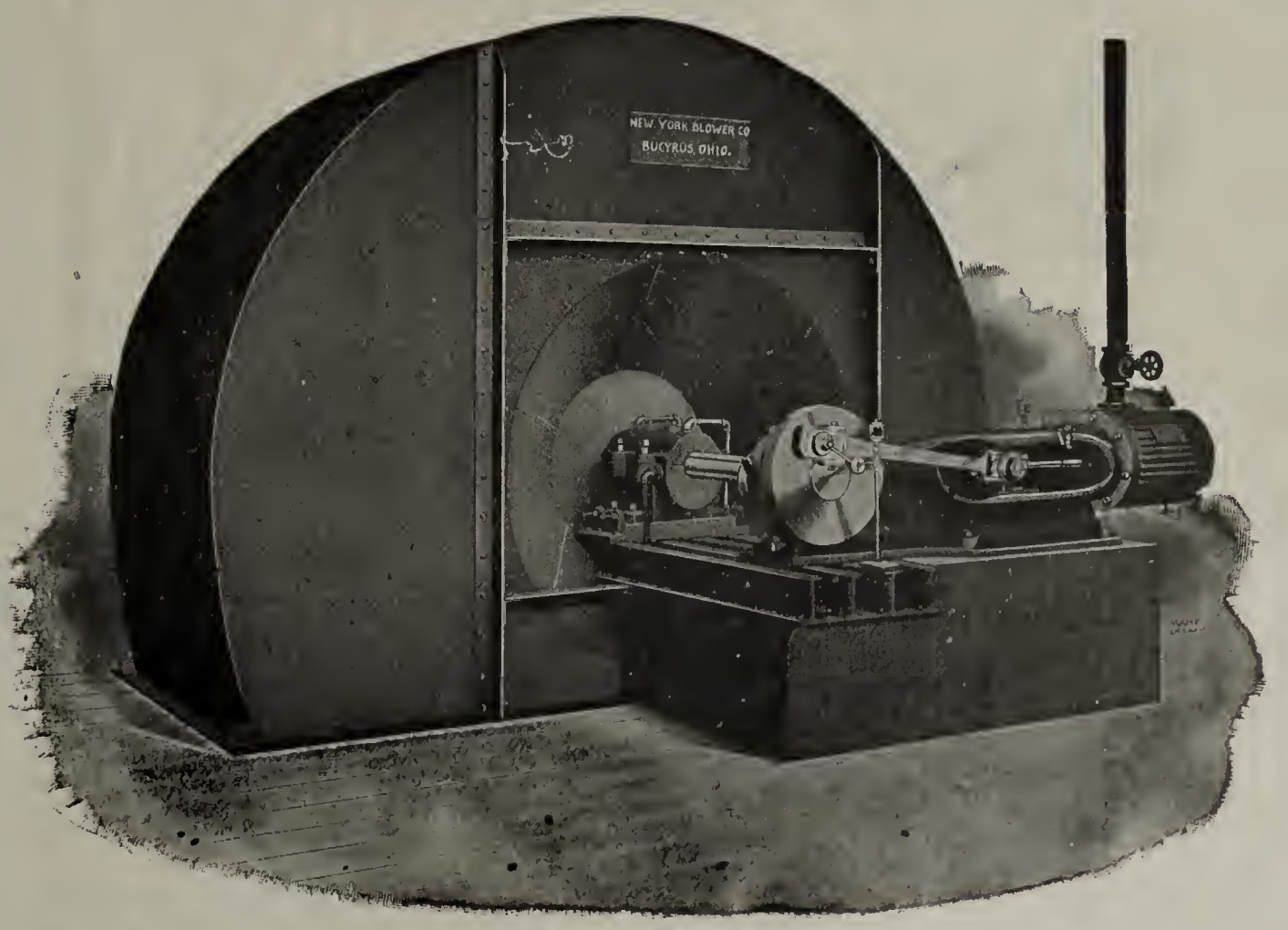
We rebuild any old Dryer into a Waste Heat Dryer at the least possible cost.

We can show a clean record and a long record of Waste Heat Dryers all over the country.

Our Waste Heat Dryers shorten time of burning, save coal, increase capacity, help the color of brick.

Write for our catalogue No. 54 on Waste Heat Dryers.

We also furnish fans for forceddraft on kilns, for water smoking, for hot floors. We furnish steam coils for utilizing exhaust steam. Write us.



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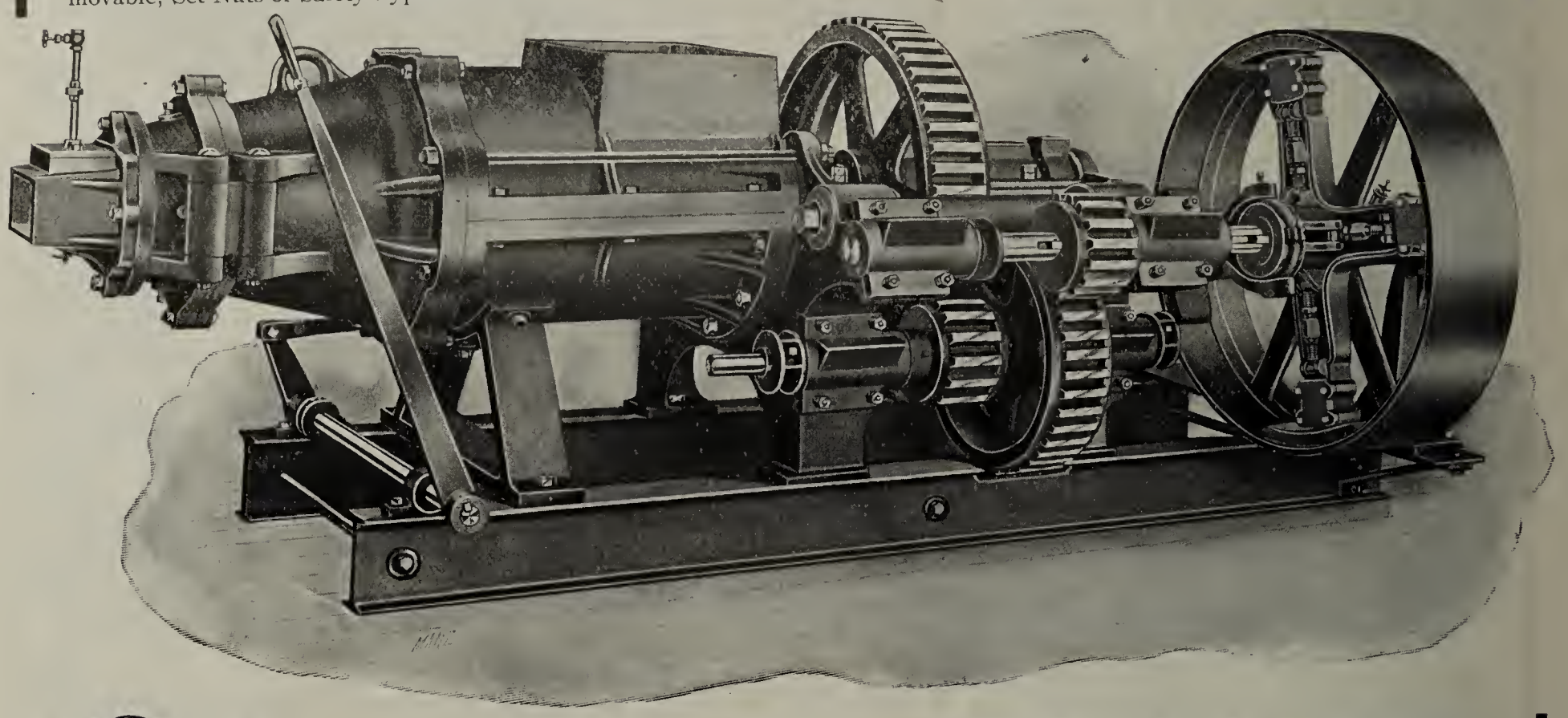

Built Right Run Right

We build other machines, larger and smaller capacity, same quality. We build everything needed to make clay products. Also Dryers that we can guarantee. Write for catalog.

THE AMERICAN CLAY MACHINERY CO.
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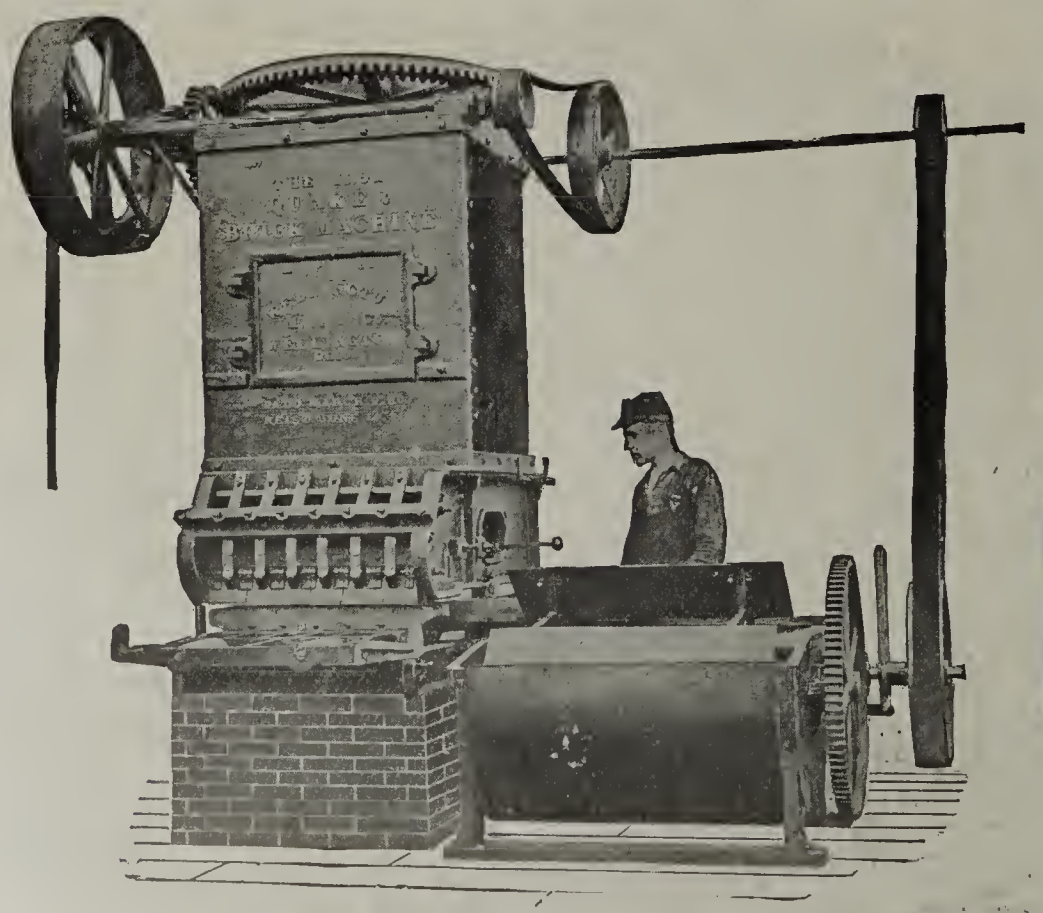
THE NEW IRON STEAM POWER "QUAKER"

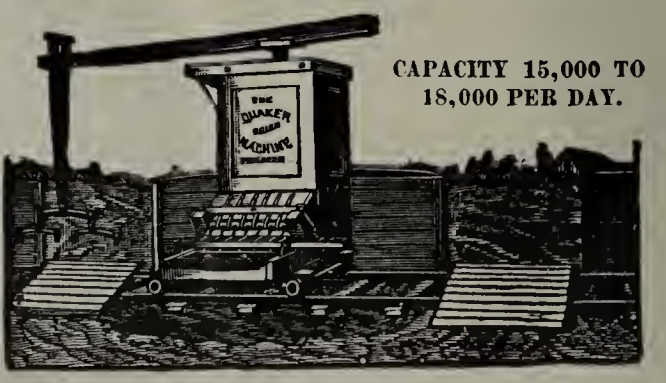


Over 500 "Quakers" in use, both Horse and Steam Power, now made entirely of Iron and Steel. I have the best, simplest and cheapest Mould Sanding Machine on the market. With my Roller-Bearing Brick Barrows you can wheel 15 per cent. more brick and do it as easily. Order one subject to approval.

ALL OTHER SUPPLIES.

Send for Catalogue.

The BEST for the least money.



CAPACITY 15,000 TO 18,000 PER DAY.

The NEW IRON HORSE-POWER QUAKER is indeed a model machine; it is the best machine for equipping small yards at a moderate expense that has ever been put upon the market. It is built for the attachment of steam gearing whenever desired.

It will pay you to see my new catalogue before placing your order.

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W. L. KIDNEY, Sales Agent, Capetown, South Africa.

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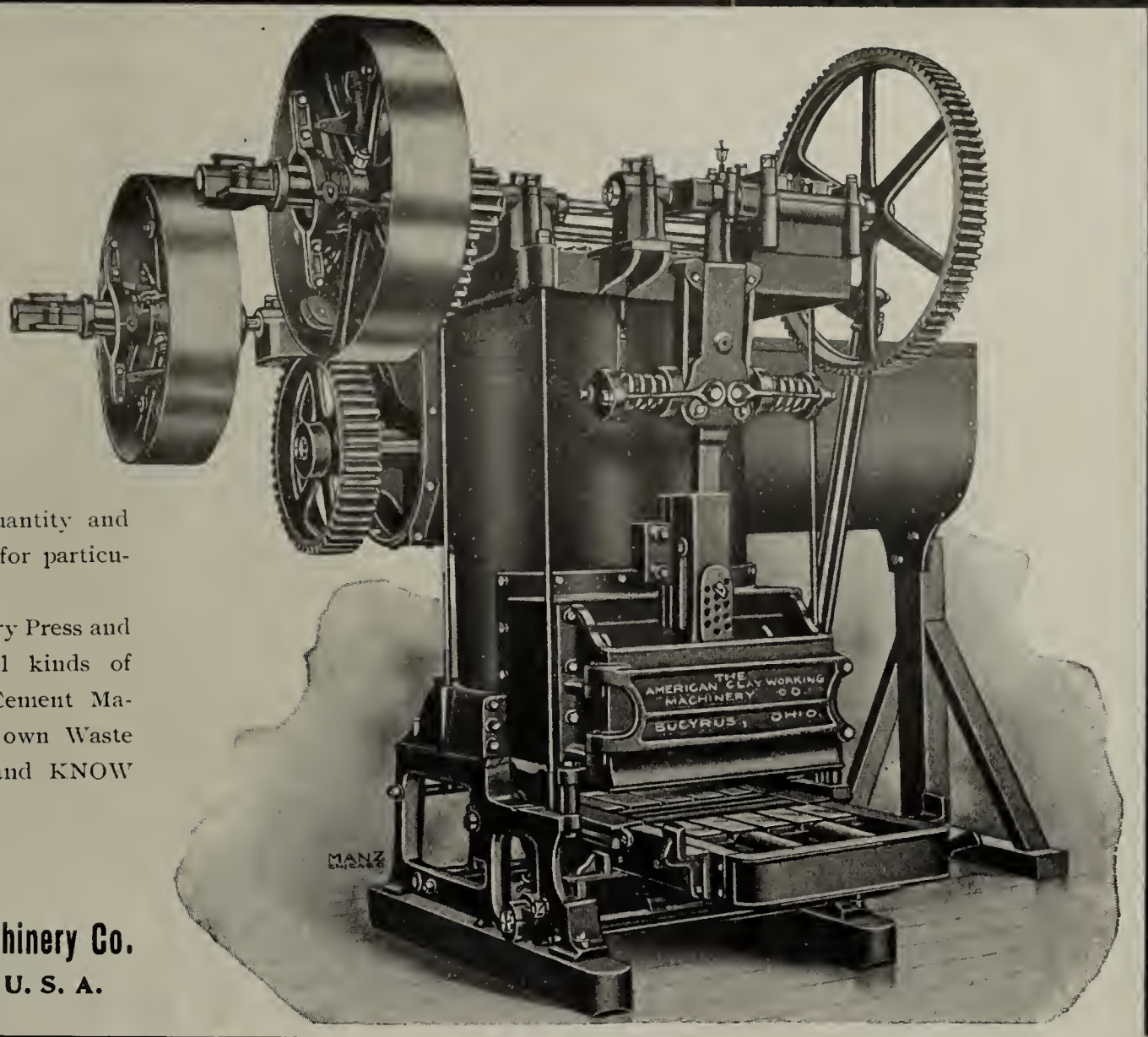
Our Soft Mud line of Machinery and Appliances is complete from Molds to Full Outfits. Design superior. Material flawless. Workmanship faultless. From smallest capacity to greatest our Machines will give complete satisfaction.

If quality of Machinery and quantity and quality of Brick interest you, write for particulars and catalog.

We build Soft Mud, Stiff Mud, Dry Press and Sand-Lime Brick Machinery. All kinds of Dryers of Quality. Pottery and Cement Machinery. Remember we build our own Waste Heat Dryers in our own shops and KNOW their quality to be the best.



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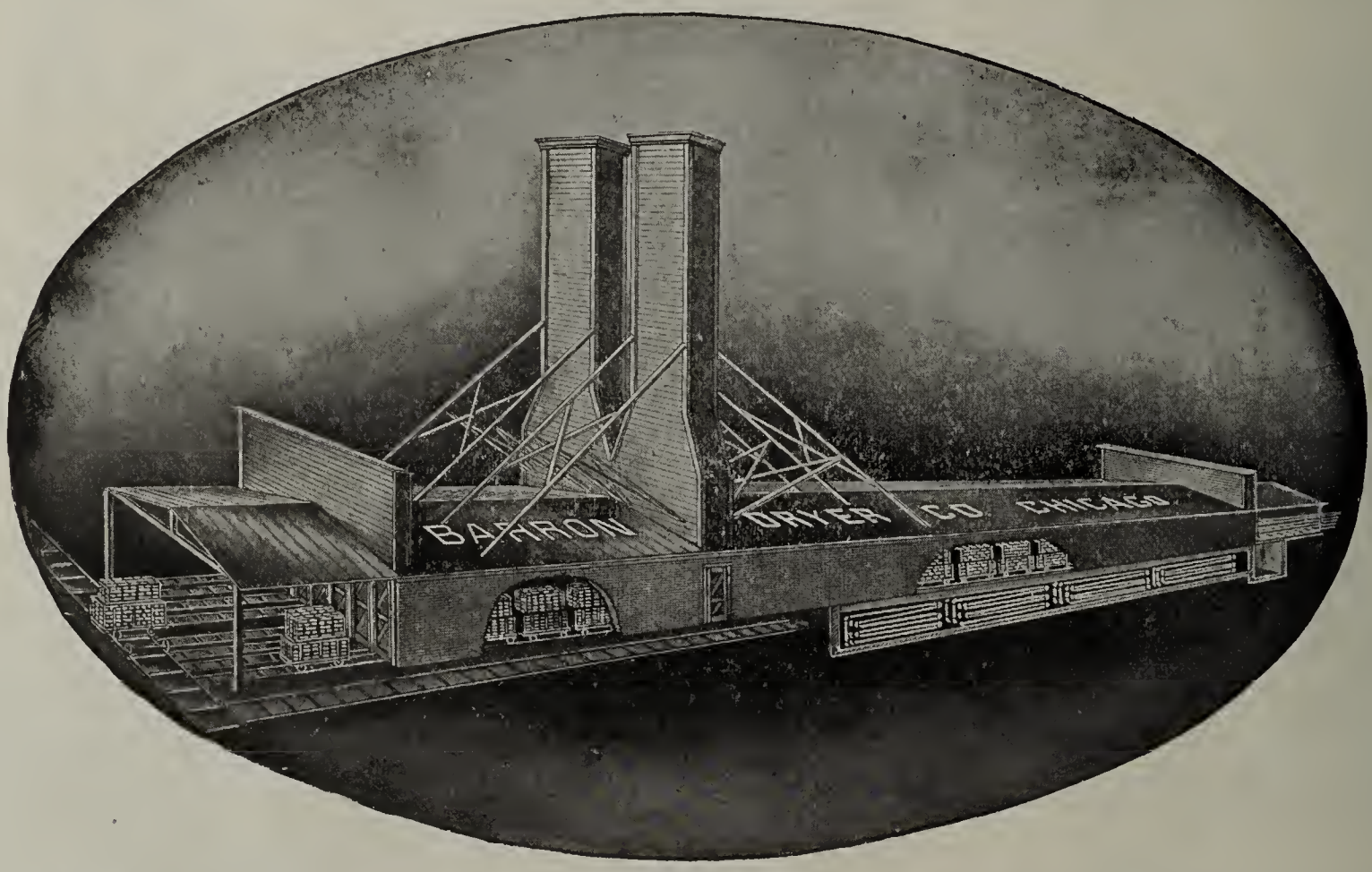

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You know that the brickmakers who are making the money in these days are those who have installed an up-to-date drying system enabling them to cope with ease with the heaviest demands of the market, their operations being uninterrupted all the year round.

This is true of them, what of your case? Why adhere still to antiquated methods subjected to weather limitations. Determine to install the most effective drying system in existence and apply for information and quotations to the

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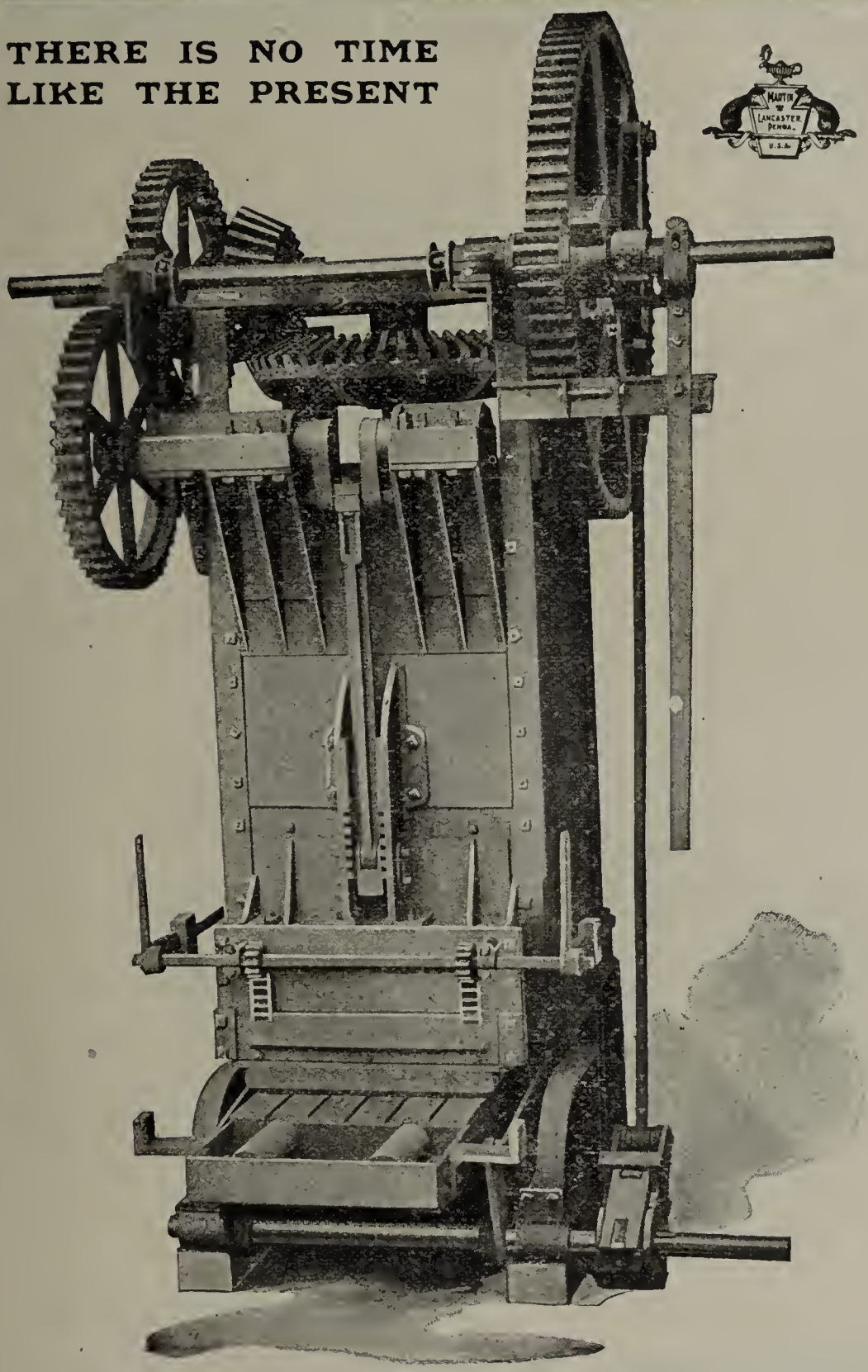
BRICK MACHINERY



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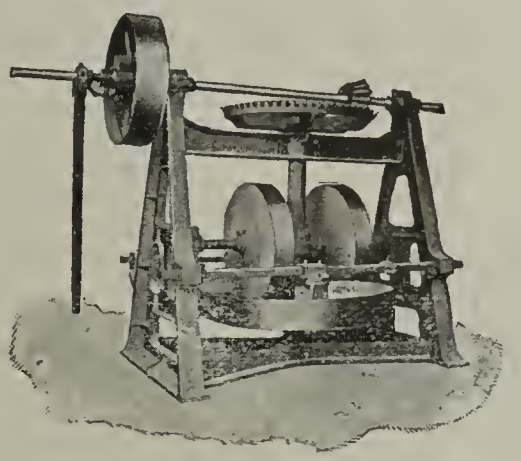

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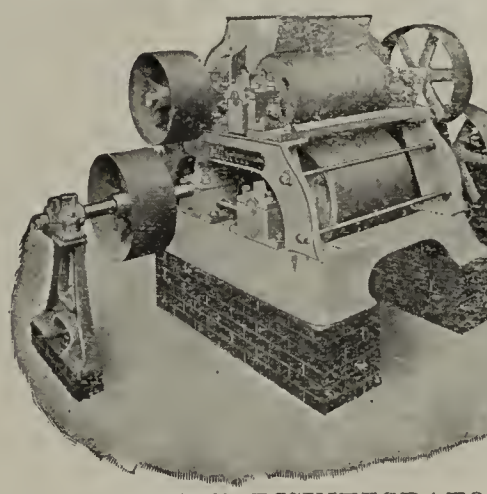

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The "MARTIN SYSTEM" of drying and handling of brick are of a modern type. No clay is too tender to be successfully handled. We shall be glad to tell you more if you would like. . . . . .

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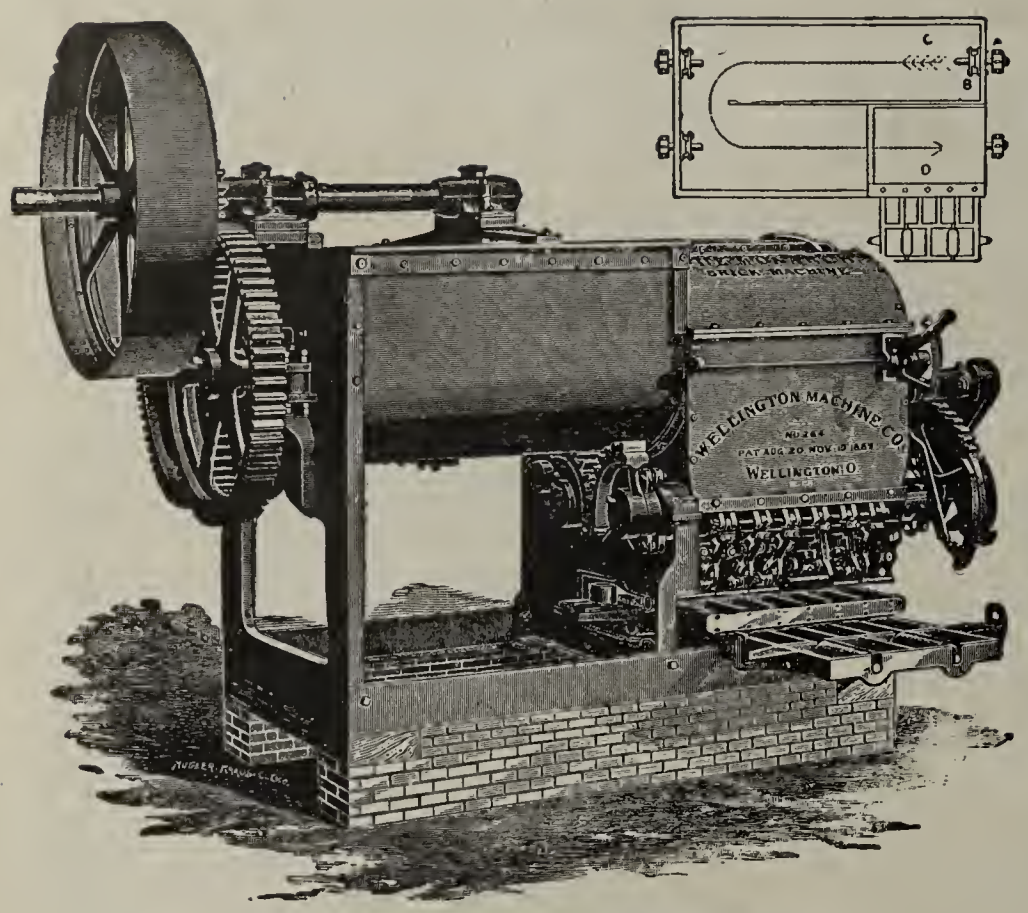
"We Furnish Everything a Brickmaker Needs."



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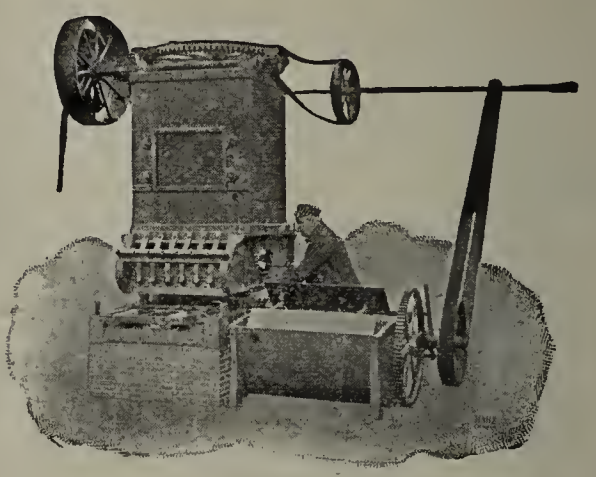

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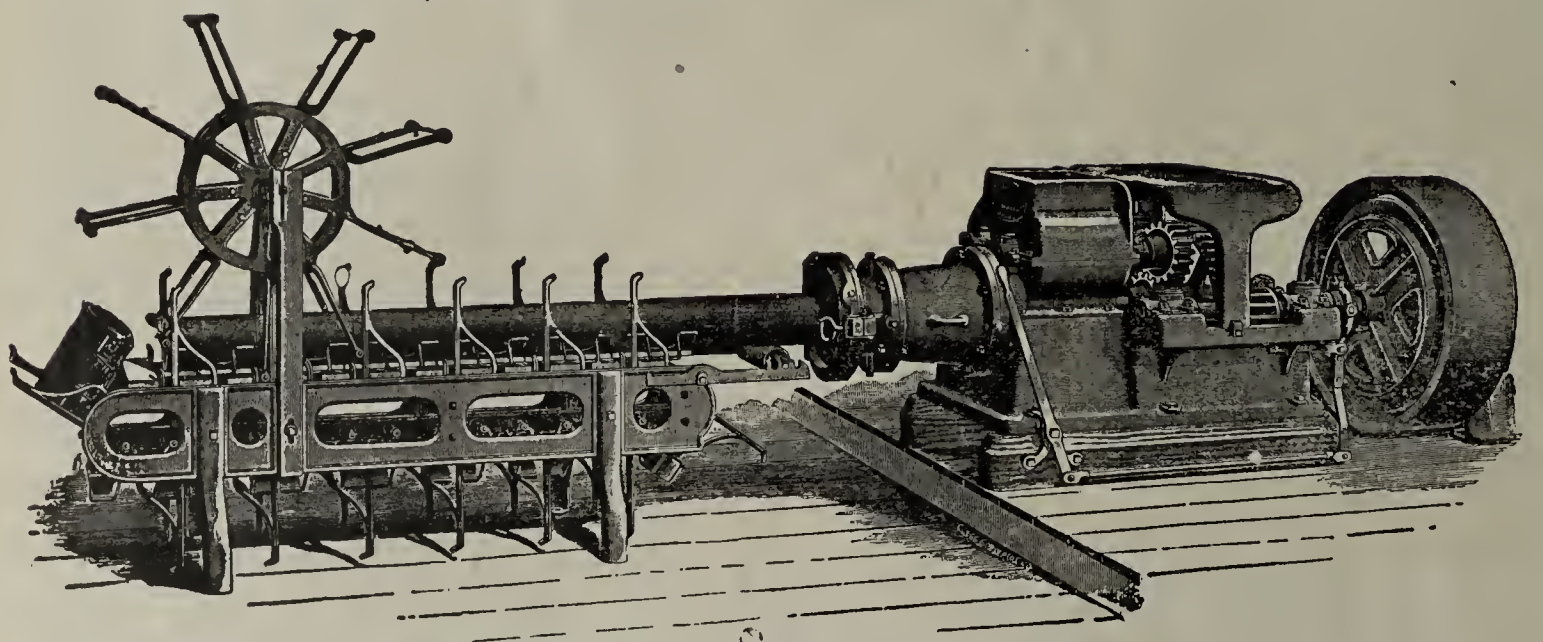

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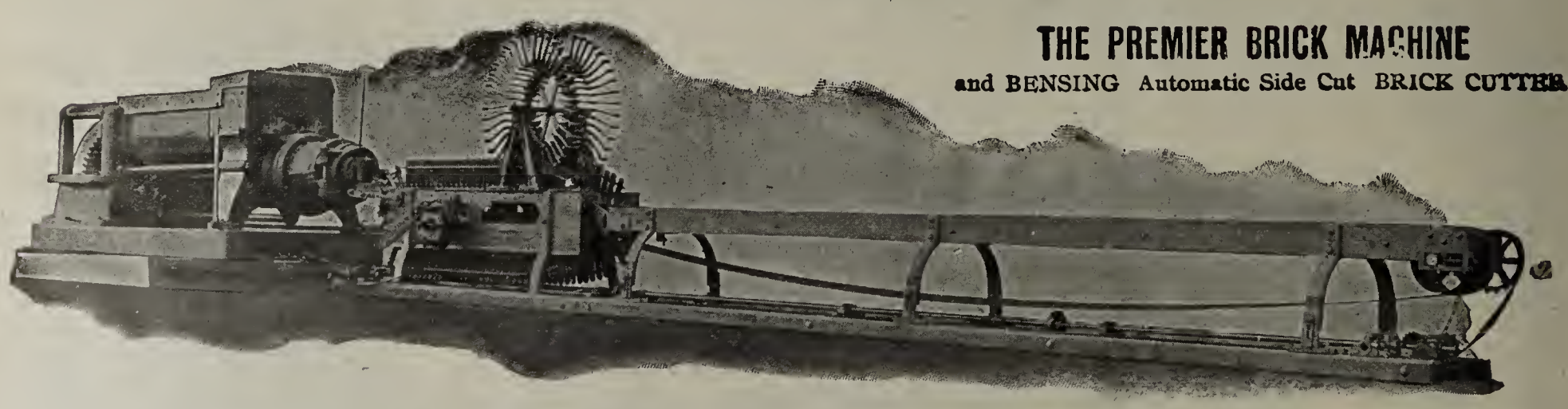

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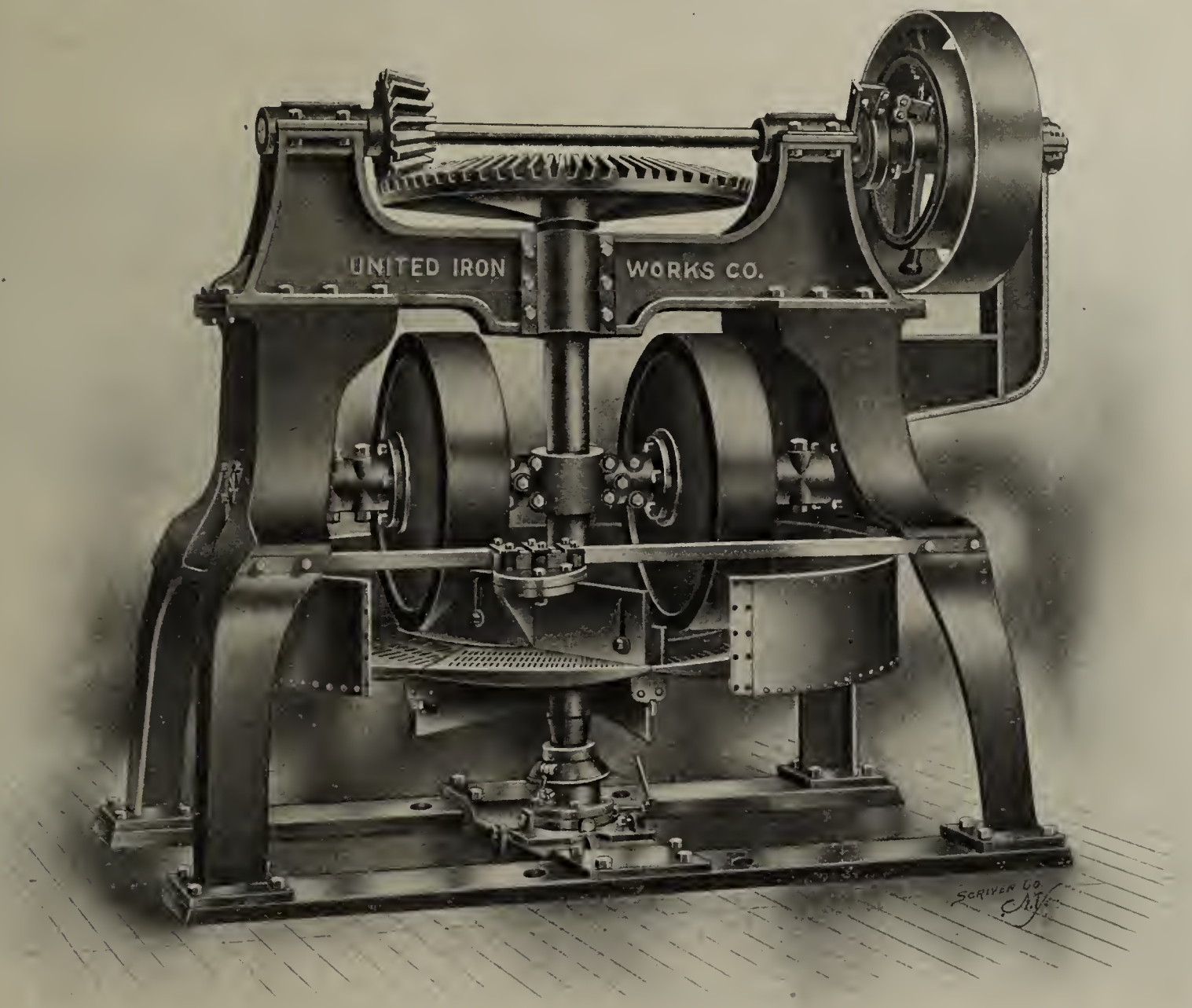

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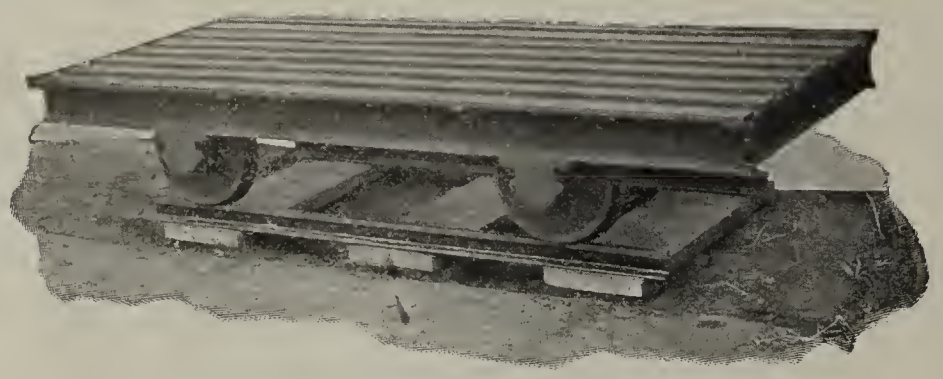

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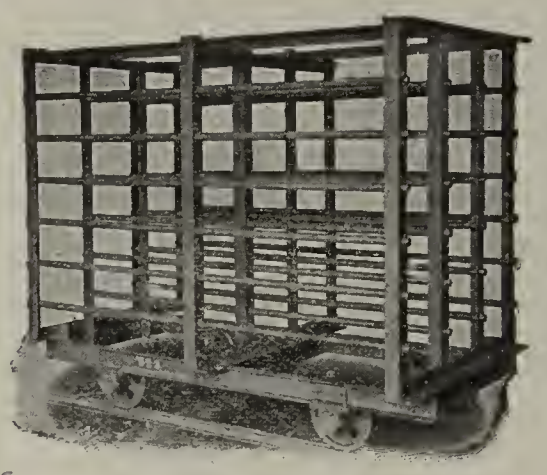

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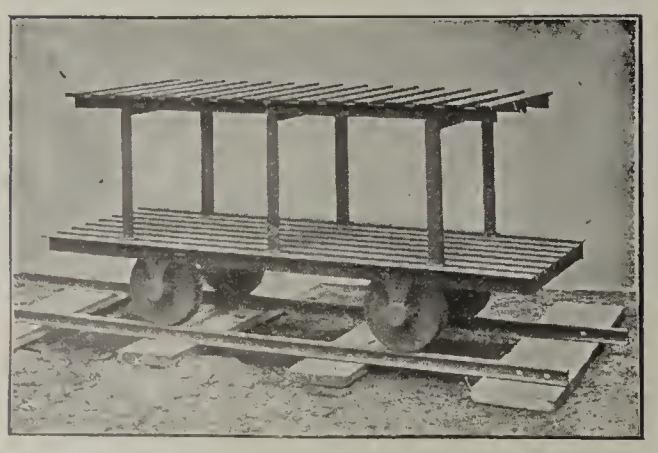

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